Lecture
ON
KOCH'S TREATMENT OF TUBERCULOSIS.

Delivered at King's College Hospital, December 3rd, 1890,

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GENTLEMEN,—Having just returned from a visit of a few days to Berlin, where I have had the opportunity of witnessing Koch's treatment of tuberculosis, I will relate to you some of my impressions regarding it. I need not now describe the method of procedure further than to say that it consists in the injection of a few drops of a dilution of Koch's fluid into the subcutaneous tissue, the part usually selected being the back between the scapulæ or the lumbar region. The effects of this treatment upon tubercular disease are simply astounding. Take, for example, the case in which its results can be most readily observed, in consequence of the superficial position of the affected part, lupus of the face. I saw in Berlin a patient with extensive lupus of the cheek, in whom an injection such as I have described had been performed two days previously. The cheek was enormously swollen and red, and the affected part of the skin covered with crusts of dried serum which had exuded as the result of the intense inflammation that had taken place. Meanwhile, no inflammation had been produced in any other part of the body. It is only the part affected with tubercle that is in the slightest degree influenced. Similar inflammatory effects are produced in other tubercular affections, wherever they may be situated. Thus in strumous glands of the neck, swelling of the glands, with redness of the skin over them, and pain, follow the injection. In gelatinous degeneration of the synovial membrane of the knee the same thing occurs. Again, in tubercular disease of the larynx, where also we have the opportunity of seeing what takes place, corresponding inflammatory changes are observed. But if the patient is affected with any disease other than tuberculosis, such as cancer or syphilis, no more effect is produced than on a healthy person. Tubercular tissue only is affected by the treatment. Meanwhile the effects on the system generally are scarcely less striking than the local ones. An injection which in a healthy person would produce no symptoms whatever is, in a tubercular subject, followed after a few hours by a more or less severe, though transient, feverish attack, characterised usually by pains in the limbs, shivering, prostration, nausea, and perhaps vomiting, while the temperature undergoes a considerable rise, it may be even to 105° or 106° F. The quantity of the material which produces these effects is extremely small. One-thousandth of a gramme of the fluid is the usual dose for the first injection in a case of phthisis. Now, Dr. Koch informed me that the undiluted fluid contains probably only about a thousandth part of the really active ingredient. If, therefore, one-thousandth of a gramme of the fluid is employed, only a millionth of a gramme of the active substance is used; yet this almost inconceivably minute quantity, diffused throughout the circulation of the human body, gives rise to these remarkable changes. But no such results occur in persons affected with disorders other than tubercular, such as cancer or syphilis. A precisely similar train of febrile symptoms may, indeed, be induced in persons who are not affected with tubercle by using a sufficiently large dose of the fluid; but for this purpose about a tenth of a gramme is required, or a hundred times the quantity that exists in the first injection in a case of phthisis. Thus in its general, as well as in its local effects, this substance picks out and renders manifest tubercular disorders as contrasted with other conditions. It thus comes to have the highest value for diagnostic purposes. A case occurred lately in Berlin, in which there was a doubt whether an affection of the larynx was syphilitic or tubercular; an injection with the fluid cleared up the diagnosis at once in favour of the latter hypothesis.

The substance seems to be wonderfully searching in its effects upon tubercle. In a house which I visited, a young medical man had an injection performed upon him as a matter of experiment, not having the slightest suspicion that he was the subject of tubercle. A violent feverish reaction followed, which led to a careful examination by a physician, and this revealed a slight but unmistakable disease of the apex of one of the lungs. A similar result occurred in the case of a lady with phthisis, who had formerly been under treatment elsewhere for a small tubercular ulcer of the larynx in the inter-arytenoid fold of mucous membrane. This ulcer had been for six months completely healed after scraping and the application of lactic acid; but after injection with Koch's fluid a red granulation made its appearance, projecting from under the left vocal cord, showing that tubercular disease was lurking where it had not previously been suspected to exist. I also saw cases where tubercular joints had been excised several months before, and all had appeared perfectly sound; but injection being practised on account of fresh tubercle elsewhere, the scar and surrounding parts became red, swollen, and painful, whereas scars of other kinds are absolutely untouched by the treatment. This would appear to indicate that some remnant of tubercular affection was present in the seat of excision, although no other means at our disposal would have indicated its existence.

But while Koch's fluid has this searching diagnostic value, there can be no doubt that it has also a powerful therapeutic or curative influence. In lupus of the face, for example, which may have long obstinately resisted other means of treatment, the crusts that form on the affected part as the result of the injections fall off in due time, leaving a more or less completely sound scar. This has been known to result from a single injection, although more frequently a repetition on several occasions is required.

In tubercular disease of the synovial membrane of the knee-joint the swelling caused by the injection soon subsides, and leaves the part smaller than before. The same thing occurs after each injection, and though I had not the opportunity of seeing any cases of this kind in which a completely natural state of things had been brought about, I was informed that such had been observed. I also learned on trustworthy authority that patients in the early stage of phthisis had under the treatment lost all their symptoms. The purulent sputa, after diminishing in amount, had become mucous in character, at the same time losing the tubercle bacilli, and had finally ceased entirely. Night sweats had disappeared, progressive loss of weight had given place to gain of flesh, while the physical signs of the disease had vanished.

But, it may be asked, how far are these effects likely to be permanent, and what limits are to be anticipated to the curative agency of the method? In seeking for an answer to these questions let us return to the case of lupus of the face. It is found that some parts of the diseased tissue lose their vitality altogether under the violence of the local action, and are discharged as sloughs. There are other situations where necrotic portions may be so disposed of. I saw a patient who had coughed up from his larynx a considerable piece of necrosed tissue; and dead portions of lung substance may be expelled with the sputa. But there are many situations in which parts deprived of their vitality by the remedy cannot be thus discharged externally, and I have seen it argued in print and heard it maintained in conversation that it is impossible under such circumstances for the dead portions of tissue to be got rid of. To you, gentlemen, such an idea would probably hardly occur. It is now many years since I observed that dead portions of tissue, if preserved from septic agency, are not necessarily separated *en masse* from the living body, but are gradually absorbed. This it was that led me to employ the catgut ligature, which, though composed of dead tissue, is eliminated by absorption. The tissue of tubercular parts is not irritating in the sense in which a piece of putrid slough is irritating. It would seem that the tubercle bacilli give rise to the production of some poisonous substance which modifies the nutrition of the parts in which they grow; but the tubercular tissue which arises from this cause is not incapable of absorption. This we know from ample experience. Thus in the ordinary strumous form of antero-posterior curvature of the spine the bodies of the vertebræ have become so softened under the influence of the growing tubercle bacilli that they have yielded beneath the weight of the upper parts of the body. But if a patient with such an affection is brought under our care before abscess has developed, even although the curvature is already strongly pronounced, we have only to enforce the strict maintenance of the recumbent posture, so as to place the affected part at

rest, giving at the same time good nourishment with suitable tonics, in order to ensure a spontaneous cure. The tubercular tissue and its contained bacilli alike disappear. And there is no reason *a priori* for supposing that the death of any portion of tubercular tissue through the agency of Koch's fluid would render it unfitted for absorption. Hence this theoretical argument against the possible efficacy of the treatment falls to the ground. As a matter of fact it is completely refuted by experience. In those portions of a lupus patch where there is no actual sloughing as a result of the injections, but only inflammatory swelling, the tubercular tissue gradually disappears, although there can be no doubt that necrotic portions are scattered through its substance. Similarly in laryngeal disease where no ulcers are present, but merely tubercular infiltration of the affected structures, the swelling has been observed to subside steadily under repeated injections without the occurrence of either sloughing or ulceration.[1]

While the tubercular tissue is got rid of by this treatment, it appears to be clearly established that the tubercle bacilli are not killed by it. It does not, however, at all follow that the tubercular disease may not be cured, although the bacilli are not directly affected. If the special diseased tissue which they inhabit is eliminated, the bacilli will be turned adrift among the healthy tissues in the vicinity, and may be quite unable to maintain their ground there. In a public hospital like this we are doubtless all of us frequently taking tubercle bacilli into our bodies; yet even in those who are hereditarily predisposed to tubercle, the healthy tissues wage successful war against the microbes unless some accidental circumstance gives them an unusually favourable nidus for their development. It is the living tubercular tissue on which Koch's remedy directly operates; yet the bacilli are affected indirectly. But what shall we say of caseous masses and sequestra in which tubercle bacilli are lodged? Koch's fluid cannot touch such bacilli, directly or indirectly, and the necrotic masses may remain as sources of future infection, like potent inoculations of a tubercle culture. In many cases, no doubt, we may combine surgical procedure with Koch's treatment, and operate, we may hope, with greater success than heretofore; because while we as surgeons clear out the dead infecting masses, Koch's injections will cure the surrounding living tubercle. But there are, I need hardly say, situations where the surgeon's knife cannot penetrate; and when extensive caseation or necrosis affects parts thus inaccessible, and where spontaneous expulsion outwards is impossible, Koch's treatment in its present form affords little prospect of cure. Perpetual fresh infections might, indeed, be combated by often-repeated injections. But as the absorption of extensive necrotic débris must be at the best a most tedious process, the treatment would, under such circumstances, have to be indefinitely protracted. What we here want is immunity from tubercle infection. If we could gain that; if, while the existing tubercular tissue was destroyed, the healthy tissues round about were rendered incapable of affording growth to the bacilli, or, rather, capable of resisting their development, the caseous or necrotic masses with their bacilli in them would remain harmless as sources of further infection, and the tubercular disease would be definitively cured. That is what we want in order to make this treatment perfect. Now, Koch himself has thrown out, in a footnote to his paper published in the *Deutsche Medicinische Wochenschrift* of Nov. 13th, the possibility that immunity may result in consequence of the treatment. Hitherto, however, it does not seem to have been attained. We read of cases—in THE LANCET of last week there is one reported—where, lupus having been apparently cured by a course of injections, a recurrence had taken place. We can well understand that if immunity has not been established, some necrotic piece remaining unabsorbed with its living bacilli may start the disease afresh.

The immunity of the whole system, which is so desirable, does not therefore seem as yet to have been attained. In the concluding passages of Koch's address on Bacteriology at the International Medical Congress, he revealed the fact which astonished the world, that he had succeeded in finding a substance which, when injected into tubercular guinea-pigs, cured them. Before mentioning this wonderful curative effect, however, he stated that the substance in question produced immunity of these highly susceptible animals against inoculation of tubercle.

The immunity, gentlemen, seemed at the time a less striking thing than the cure, because it was only in harmony with what we had already known in the case of diseases such as anthrax and chicken cholera as the result of Pasteur's "vaccinations." But the immunity is that which we now long for. It has not been attained in man as it has in the guinea-pig. Why should there be this difference between the guinea-pig and man as regards immunity? It strikes me that it may perhaps be due to the fact that the guinea-pig is capable of taking much larger doses of Koch's fluid without bad effects. In a healthy guinea-pig 2 cc.—that is to say, practically, 2 grammes—of Koch's fluid undiluted produce no effect in the way of general reaction, whereas in a healthy man 0·2 cc., just one-tenth of the quantity, would probably cause serious febrile disturbance. Koch, having experimented upon guinea-pigs, tried like a hero the effect of an injection upon himself. He employed 0·25 cc., which, as we have seen, would have produced in a guinea-pig no general disturbance at all, and the results in him were serious, and, indeed, alarming. A guinea-pig, then, will take fully ten times as large a dose as a man to produce the same effect upon the general system. But if we consider what the weight of the guinea-pig's body is as compared with that of a man, we find that the guinea-pig requires, weight for weight, at least 1500 times as much of the fluid to produce any effect upon the general system. And it seems to me very likely that the immunity in the guinea-pig results from the comparatively large dose of the fluid which it receives. If this be so, it might perhaps be possible to produce immunity in man also, if we could sufficiently increase the dose of the remedy. Now it is a remarkable circumstance with regard to the injections in tubercular patients that, beginning with a small dose, one-thousandth of a gramme it may be, producing considerable fever, the fever having subsided, twice as much may perhaps be injected next day without causing as much fever as resulted from the first injection, and in the course of two or three days a considerably larger quantity may be used without producing any general effect whatever. It has been known that, after three weeks of the treatment, 500 times the original dose has been borne. How is this to be explained? There seem to be two conceivable explanations. One is that there may be an acquired tolerance of the remedy, the system becoming accustomed to it, as it does to morphia or to arsenic. The other is that the fever is caused, in part at least, by the inflammation of the tubercular tissue induced by the remedy; and that as the tubercular tissue is progressively eliminated, there is less and less tissue to be inflamed, and therefore less fever. I confess I cannot think that the latter is the true explanation. It seems to me inconceivable that, in a patient with a considerable mass of tubercular disease in the lungs, the tubercular tissue can be reduced by one-half in the course of twenty-four hours. Yet this it seems necessary to assume in accordance with the hypothesis. It is also a significant fact that the degree of fever caused by the first injection is by no means strictly proportioned to the amount of tubercular disease present in the patient. It may be said, indeed, that we have no analogy for such rapid accommodation of the system to such a powerful remedy. But the principle of acquired tolerance is familiar to us, while the remedy is of a totally novel character. Acquired tolerance, then, seems to me to be by far the more likely explanation. If this be the true state of the case, it seems to point to the possibility that the tolerance might be carried still further, and brought up to a considerably higher degree than obtains in the healthy subject. We have seen that the fever which is induced in tubercular patients by Koch's remedy is identically similar to that which is caused in healthy persons by larger doses. As regards the fever, unlike what occurs in the local phenomena, the tubercular patient differs from the healthy in degree, not in kind.[2] It seems, therefore, *a priori* not improbable that increased tolerance might be induced in the healthy person also, and that in the tubercular, if instead of stopping short at the dose ordinarily borne by the healthy, the quantity were pushed steadily further and further, a degree of tolerance might be attained which might be attended with immunity. If this has not been already attempted, it seems to me worthy of trial.

But there is another line of inquiry from which I cannot help hoping for good results. Through Dr. Koch's great

[1] Vide Lublinsk: Deutsche Med. Wochenschrift, Nov. 27th, 1890.

[2] It would appear from recent publications that cases now and then occur in which little or no fever is produced by the ordinary injections, in spite of the presence of a considerable amount of tubercular disease. *Vide* Deutsche Medicinische Wochenschrift, Dec. 4th, 1890, p. 1134.

kindness I had the opportunity of penetrating into the arcana of the Hygienic Institute of Berlin and seeing most beautiful researches being carried on in that institution, of which Koch is the inspiring genius. I saw things which, while they excited my admiration, made me also feel ashamed that we in this country, from one circumstance or another, are so greatly behind our German brethren. The researches to which I desire specially to refer are still in progress, and fresh facts are accumulating day by day. As they have not yet been published, I am not at liberty to mention details, but there can be no harm in my saying thus much, that I saw, in the case of two of the most virulent infective diseases to which man is liable, the course of the otherwise deadly disease cut short in the animals on which the experiments were performed by the injection of a small quantity of a material perfectly constant in character, an inorganic chemical substance as easily obtained as any article in the materia medica. And not only so, but by means of the same substance these animals were rendered incapable of taking the disease under the most potent inoculations; perfect immunity was conferred upon them. I suspect that before many weeks have passed the world will be startled by the disclosure of these facts. If they can be applied to man—though our experience of the different behaviour of Koch's fluid in guinea-pigs and in the human subject makes this a matter of uncertainty until tested by experiment—but if they can be applied to man, the world will be astonished, and the beneficence of these researches will be recognised on every hand. At the present time Koch is engaged in the earnest endeavour to produce his remedy for tubercle by some process which could be divulged without the risk of the public being supplied either with material useless from its inertness, or, on the other hand, with deadly poisons. Koch, I believe, would not have published his method at all, had it not been for great pressure brought to bear upon him, until he could have produced it in a form capable of being revealed in every detail. It is nothing but the fear that, by publishing now the precise mode of preparing this material, he might do immense harm instead of good that prevents him from making it known. And I must say that the carping against Koch on account of what is spoken of as a "secret remedy" can only proceed from absolute ignorance of the beautiful character of the man. But if it should so happen that, as with the other diseases to which I have referred, so with tubercle, complete immunity should be obtained by means of some inorganic chemical substance which anyone can prepare, then would be achieved the complete triumph of the treatment of tuberculosis. And, for my part, I rejoice that we are permitted to look forward with hope to that glorious consummation.

ABSTRACT OF AN

Address

ON

THE CHARACTERISTIC ORGANISM OF CANCER.

Read before the Pathological Society of London on Dec. 2nd, and the Medico-Chirurgical Society of Edinburgh on Dec. 3rd, 1890,

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DR. RUSSELL stated he had been occupied for some years in tracing the mode of growth of cancer in different organs. By this study he hoped to map out the steps of the process, and by learning the manner of its growth to perhaps obtain an insight into the factors, determining the departure of the tissues from their normal behaviour and arrangements. He had found appearances which he could not fit into modes of cell growth and nuclear proliferation, and these had so puzzled him in one case that he asked his pathological assistant, Mr. W. F. Robertson, to experiment on it with every possible combination of stains with a view to the possible differentiation of some of these structures. His attempts were soon successful by the following method: 1. Saturated solution of fuchsine in a 2 per cent. carbolic acid in water. 2. 1 per cent. solution of iodine green (Grüber's) in a 2 per cent. carbolic acid in water. Place section in water. Then stain in fuchsine for ten minutes or longer; wash for a few minutes in water. Then wash for half a minute in absolute alcohol. From this put the section into the solution of iodine green, and allow it to remain well spread out for five minutes. From this rapidly dehydrate in absolute alcohol, pass through oil of cloves, and mount in balsam. By this method it was found that certain structures stained a brilliant purplish-red, while the tissues stained green. Similar bodies were found in a number of cancers then examined, and these, for laboratory purposes, were called "fuchsine bodies."

With this discovery all kinds of possible errors suggested themselves. That they were not accidental impurities in material, bottles, or stains was shown by the fact that tissues from the same bottles and cut at the same time gave no indication of this. That they were not the nuclei of tissue cells in exaggerated reproductive activity was tested by the cells in organising inflammation of serous membranes not giving the reaction, nor the cells in tubercle, in typhoid lesion, in inflammatory affections, or in the organs of an embryo. That they were not globes of some degenerative substance was proved by the examination of a great variety of tissues showing different varieties of degeneration. Further, they were not present in the sarcomata, nor in simple tumours, such as fibromata, papillomata, myomata, &c., nor in venereal warts and condylomata, nor in primary syphilitic sores. Sections of a tumour labelled adenoma of the mamma, and rich in adenomatous structures, and a gumma of the dura mater showed the bodies, but of the history of these cases he was ignorant. Another syphilitic case which had defied treatment, and in which there was extensive destructive lesion of the fauces and larynx and the bones of the vertebra behind the fauces, showed a few fuchsine bodies in sections of the larynx. Altogether tissues had been examined from fifty to sixty different cases selected with the purpose of subjecting the positive observations to the severest possible tests. The result was that fuchsine bodies were found in one case of chronic ulcer of the leg, one of tubercular disease of a joint with old sinuses, one of phenomenally severe, destructive, and intractable syphilitic lesion; and in two other cases, of which he had no record, one a case of mammary adenoma, and one a gummatous tumour of the meninges. He indicated possible explanations of these, and that they could not be regarded as sufficient to overthrow the other evidence.

Turning to the positive side of the question, forty-five cases of cancer had been examined, which included malignant epithelial growths of various structure, as epitheliomas of the lips and face, rodent ulcer, scirrhus of the mamma, both primary and recurrent; malignant adenoma of cervical glands, cancers of the stomach, liver, spleen, abdominal glands, supra-renal capsules, uterus, and ovaries. The pathological position of one of these was still uncertain; another was represented by sections dated 1885; in these two no fuchsine bodies were found, but in the remaining forty-three they were present. In individual sections they varied greatly in number, and it was noted that they occurred in special abundance in foci. They might be present in the small-celled infiltration at the margin of the cancer, amongst or in the epithelial cells, in the stroma, or in the lymphatics. As a rule, they occurred in clusters or groups of two, ten, twenty, or more, and they almost always showed a clear space round them. In shape they were perfectly round. The commonest size was 4 μ, but they might be much smaller or larger. Examined by daylight they appeared homogeneous and structureless.

As there seemed to be no escape from regarding these structures as special organisms, which—so far at least as his pathological material was concerned—were practically confined to cancer, the question was, Were they animal or vegetable, and what was their mode of growth and reproduction? To answer this question it was necessary to consider the work which had been done, especially on the Continent, in the study of cancer. He then referred briefly and in detail to the various papers which had appeared in French and German literature, in which it was contended that an animal parasite had been found in some cases of cancer. Summing this up and excluding molluscum contagiosum, it was found that Albarran, Darier, Thoma, Wickham, and Sjöbring had found in cancer an organism which they described as belonging to the protozoa, while Thoma did not commit himself, and only Wickham and Sjöbring give figures to aid in forming

a judgment on their contentions. He next pointed out the characters of the protozoa, more especially the psorospermiæ or coccidiæ, and indicated that according to the authorities these were unicellular organisms forming in their interior psorospermiæ, which in turn developed spores which were usually sickle-shaped bodies, and became free parasites. To meet the necessity of this stage in their life, Sjöbring had figured the spore formation in the cancers he examined. In short, looking at the work on this subject in the concrete, he regarded some of the figures as having nothing whatever to do with foreign organisms, that others were certainly misinterpreted, while some probably represented the organism with which he was dealing.

Returning to the consideration of the fuchsine bodies, they might be studied by the special method of staining given, or by logwood and eosine, or by Gram's method with methyl violet. Each group and most of the isolated individuals were surrounded by a clear area, often having the appearance of being bounded by a definite capsule. In so far as the isolated individuals were concerned one entered an epithelial cell; the protoplasm and the nucleus of which stained with logwood; while the foreign organism lay in a clear area or vacuole in the cell protoplasm, to which there was no true capsule. Both in the epithelial masses and the vacuoles referred to there might in addition be small fuchsine bodies surrounded by a clear space, and bounded by a capsule or limiting structure. Further, it was to be noted that in the vacuoles there might be several fuchsine bodies; while in others the fuchsine body was granular and had lost its characteristic staining reaction, and showed undoubted spores in its interior. In the epithelium it may also be noted that some fuchsine bodies are surrounded by a vacuole, while others are not.

From the foregoing it might be contended that the organism in question was a protozoon, were it not that in sections stained by Gram's method the mode of reproduction is shown quite diagrammatically. The large fuchsine body is seen to give out a small globular body, which increases its distance from the parent body but remains attached to it by a filament; this bud grows and gives off another and a short chain, or other forms may be produced. The small spores could also be seen in the interior of the lymphoid cells, or leucocytes in the infiltrated area, the effect of this being to clear up the protoplasm of the cell and to produce a clear space or vacuole with a limiting ring. This he thought was the mode of formation of what might be called the free encapsuled organism present amongst epithelial cells or lying in vacuoles. As to the appearances in the interior of epithelial cells, the foreign body at first had no vacuole round it, but ultimately developed one, and this was to be accounted for by its influence upon the surrounding protoplasm leading to its classification. He said that there could be absolutely no doubt that the organism was a fungus which belonged to the sprouting fungi—*Sprosspilze*—of Nägeli; but the proof of this was not to be readily found in every section, for the usual arrangement was in clusters, especially as demonstrable by fuchsine and iodine green method, which he thought acted best when the organism was at a certain stage of its growth.

In conclusion, he said that if the presence of this parasitic fungus in cancer was confirmed by other observers, we had found in it an organism whose nutrition, reproduction, and death in the tissue could hardly be conceived as occurring without producing changes not disproportionate to the anatomical changes present in cancer.

ON THE

ADMINISTRATION OF CHLOROFORM.

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ONE of the dangers of controversy is the almost inevitable crystallisation of the thoughts of those who advocate, or press, the negative of any question. There is certainly some fear in the present juncture lest the common-sense side of the chloroform question should be left out in the cold while we hotly discuss the *modus operandi* of its death-dealing properties. On the present occasion I hope to draw attention as concisely as possible to the various practical issues involved in my title. Chloroform, I take it, cannot, even if we would, be laid aside; it possesses properties so valuable and so useful that it will, perhaps for ever, remain a favourite anæsthetic with many operating surgeons and obstetricians. The main considerations, then, for practical men are: How far is it a dangerous agent, in what does its danger consist, and can this danger be abrogated or minimised so as appreciably to render the peril beyond ordinary computation either by methods of administration or other means; and, lastly, how does it compare, as far as absolute safety goes, when placed side by side with other anæsthetics?

It may be said that the present time is hardly ripe for opening such an inquiry, since the subject is still to be further elucidated by the clinical report promised us by the Editors of THE LANCET. But we should remember that from its very nature such a report must be devoid of personal colour, being statistical, so that the experiences of practical anæsthetists can neither forestall nor be devoid of value whatever may be the finding of THE LANCET Chloroform Inquiry. Death under chloroform is, unhappily, a frequent occurrence. We hear of a few deaths, probably not all, and if we accept 1 in 3000 as a working estimate of their frequency we are probably within the mark, although Surgeon-Major Lawrie says he has given chloroform five or ten times daily for fifteen years without a casualty—i.e., a mean of 40,000 anæsthetics; and other exceptional estimates have been given by Baudens, 1 in 10,000 during the Crimean War, and Hunter McGuire, 1 in 15,000 during the Secession War. These deaths may be due to—(1) impure chloroform; (2) careless anæsthetisation; (3) careful but faulty methods—in any of which events the chloroform is not to blame; (4) the direct effect of the anæsthetic, due to its intrinsic properties, and unavoidable by care, skill, or the most approved methods.

No. 1: The impurities of chloroform which may produce untoward effects are free acid, free chlorine. These, however, always give rise to coughing, and assail the nose of the administrator as well as the patient. Chloroform, when left for long exposed, liberates noxious fumes, and should in this case not be used; and chloroform, when given in a room heated strongly by illuminating gas, also decomposes, and most pungent and irritating fumes are given off, but only the utmost carelessness could fail to detect such a state of things. I think we may take it that by far the greater number of cases of chloroform deaths occur in public institutions, hospitals, &c., where the drug is in constant use and for several patients. We may fairly say then that reason No. 1 accounts for but few cases.

No. 2 is probably a more common source of danger, and is one which is likely to be still more prolific of evil if the belief gets abroad, as a daily paper expressed it after the first authoritative statement, that the heart was unaffected by chloroform, that taking this anæsthetic possessed no more danger than taking a glass of whisky-and-water. If the contention of those who deny primary cardiac syncope as a possibility in chloroform narcosis be just, any method which ensured due respiration and a percentage of chloroform below 4 per cent. must be approved and be safe, unless the personal equation of the administrator coming in changes the safety to danger by his failing to watch the respiration &c.

No. 3: Undoubtedly some methods are open to grave cavil, but by far the most common methods employed are the open method—viz., the use of lint or a towel—Skinner's mask or Junker's apparatus, and these are not faulty in principle, although dangerous in that the administrator may through heedlessness lessen or increase the strength of the anæsthetic to a dangerous extent.

No. 4: Chloroform kills, all admit, through respiratory paralysis; while observers are divided as to whether it also (α) allows death through reflex shock in a patient partly or wholly under its influence, or (β) destroys life by direct and primary heart syncope. Admitting only that extinction ensues through respiratory paralysis, one party affirm, and so far justly if we admit their premisses, that the duties of the administrator are really free from anxiety; watch the respiration, say they, and if it fails take your measures promptly—artificial respiration undertaken before the heart has given out (secondary heart syncope) will lead to resuscitation. On the other hand, those who contend that chloroform kills directly through the heart teach us a mournful story. Take the utmost care, use the most perfect method in the most approved and conscientious fashion, watch for the inception of symptoms of danger and grapple promptly with the peril, and yet in spite of all a certain number of the patients will die. Both will admit the danger

from heart syncope secondary to respiratory failure, and both will submit that such deaths should not occur; that they mean in many cases carelessness and deviation of the anæsthetist's attention from the patient, and both will assert that most of such patients can be brought out of their peril by prompt and skilful employment of artificial respiration &c. It then becomes necessary to consider the evidence upon which these rival schools of thought and teaching base their opinion and practice. In this connexion I would point out a most valuble source of information which has up to the present been but lightly laid under contribution, and which is capable of furnishing the most valuable testimony. I refer to the frequent cases which are met with by those who have a large practice in chloroforming in which untoward symptoms occur, but which not ending fatally are not recorded in the medical press, and perhaps noticed only by the chloroformist himself.

Upon the question of primary heart failure the Hyderabad Commission have definitely assumed the position that respiration always fails before cardiac syncope—in other words, that cardiac syncope is invariably secondary. The immense care with which the work of the Commission was conducted, the great help it received from the experience of Surgeon-Major Lawrie in chloroforming and that of Dr. Lauder Brunton in physiological research, render its conclusions of especial value, and justify us, I think, in saying that if primary heart failure from chloroform is a delusion, the Hyderabad Commission were competent to prove the same up to the hilt. The evidence adduced is now common property, so that detailed quotation is needless. In chloroforming considerably under one thousand dogs, rabbits, &c., the Commission failed to induce primary syncope, and Surgeon-Major Lawrie in, say, 40,000 inhalations in human beings, the bulk of whom we may assume were Asiatics, never lost a patient. Two classes of fatalities occurred among the lower animals—(1) death from failure of respiration, and (2) accidental deaths, the cause of which the report fails to recognise, except that it assumes it was due to an overdose. An effort was made to bring about fatty changes in the dog's heart by giving phosphorus &c., but even then primary heart failure did not occur, nor were the Commissioners able to show any evidence of shock occurring in the lower animals whilst under chloroform. If this brief statement fairly represents the outcome of the Hyderabad Commission's work, we find their evidence to be wholly negative upon this important matter. But the question of primary heart failure does not rest solely upon the negative evidence mentioned above. Snow and the older authorities fully recognised the condition; and the Glasgow Committee, both in their original and recent reports, have distinctly asserted that even among the lower animals primary heart failure occurs, while it has been left for Prof. McWilliam of Aberdeen to explain the *modus operandi* of the prejudicial action of chloroform upon the heart. Again, the independent testimony of Prof. Wood of Philadelphia has been given to the occurrence of primary heart failure under chloroform, and quite recently he had been at the pains of reinvestigating the matter, with a result confirmatory of his original decision. Reverting to the careful research of Professor McWilliam, we find the following phenomena narrated and graphically recorded by an ingenious arrangement of apparatus. Animals kept under artificial respiration worked by an arrangement which ensured equal and tranquil breathing, and at the same time enabled the operator to give any definite percentage of chloroform, were watched to see what effect the chloroform so given had upon the heart. This effect is notable. The heart muscle relaxed, and dilatation took place, leading, of course, to gradual failure of circulation. Up to a certain point this "give" of the heart muscle was recoverable, and upon chloroform being stopped the heart regained its normal tone and contraction. Other phenomena associated with the action of chloroform upon the heart are summed up under the term "delirium cordis," or arhythm of the heart muscle leading to futile contraction of portions of the myocardium without assisting the viscus to effectually contract and expel its contents. In some cases the dilatation was sudden, and all efforts at resuscitation failed. These results are important, in so far as they are positive, not negative, and because they are demonstrable; the heart is seen to undergo dilatation and to contract up to its usual capacity, or to give out altogether, as the case may be. We have, then, to a certain extent, a conflict of opinion—the one based upon negative, the other upon positive evidence, at least in the field of experimentation; but I submit neither view can be allowed to go wholly unquestioned when we pass from dogs and monkeys to men. It seems consistent to examine how far the one or the other opinion is borne out in our experience in hospital and in private practice. I find that in most hospitals the directions are carried out which the Committee of the Royal Medico-Chirurgical Society promulgated in 1864, and which are practically those reasserted in 1889 by the Hyderabad Commission—viz., recumbent posture, loosened dress, &c., and that the pulse is watched, an injunction which the more recent Commission strongly repudiates. And yet I find deaths constantly occur, and these deaths arise, we are told by the chloroformists, from primary heart failure. Respiration, it is asserted, does not fail first. It is competent for a dispassionate commentator to say that the hurry and excitement of a chloroform death are such that mistakes are easily made, and that it is a well-known fact that the thorax works as if in respiration even when no air can enter the lungs; but, granting this, we have to remember two facts. The "first aid" to those in danger from chloroform is now widely known: the tongue is dragged out, and artificial respiration is started as soon as danger threatens. The other fact is that when the danger is due to primary respiratory failure these measures restore life; when due to primary cardiac failure they fail. Do most of the cases of peril under chloroform recover or succumb?

Sir Joseph Lister, in his classical article on Chloroform in "Holmes' System of Surgery," tells us that he has saved more than one life by directing attention to respiratory difficulties under chloroform. But chloroformists are not so careless as to neglect the elementary law of the anæsthetist—viz., to permit nothing to distract his attention from his patient. Again, the fact that Snow and Clover each met with deaths proves that such events, however they may be lessened in number by skill and care, cannot be reduced to a vanishing point. A further consideration which I am able to adduce from my personal experiences is this, that of the very large number of patients to whom it has been my duty to give chloroform, or the substance called methylene, a certain percentage have given me anxiety. My plan is to use Lister's open method or Krohne and Sesemann's recent and useful modification of Junker's inhaler, the flannel cap face-piece of which permits a free current of air to pass through it. I also make it a rule to test the vigour of respiration by placing my hand over the mouth, to watch the colour of the patient's face and ears, and to keep a finger upon an artery, always testing the initial rate and force of the pulse in that artery at the commencement of the operation. Proceeding in this way I have sometimes found that the heart flags even when respiration, judged by the eye and the plan above mentioned, shows no alteration; that not only is there evidence of general feebleness of circulation, which might be attributed to the fall of blood-pressure, regarded by the Hyderabad Commission as protective, but that distinct and unmistakable cardiac enfeeblement occurs. Further, this is progressive, and likely, it has appeared to me in more than one case, to end in cardiac syncope unless prompt and vigorous measures were used. Inversion, which undoubtedly would be highly prejudicial in chloroform danger due to respiratory paralysis or asphyxial conditions, proves highly efficacious in such cases of cardiac and circulatory enfeeblement. In contending that a fall of blood-pressure is protective, I think a most important factor has been left out of consideration. For granted that such a fall leads to lessened intake of the narcotic vapour, it also determines a lessened output of that which still circulates in the blood. Things being equal, I believe that chloroform acts more harmfully upon poorly oxygenated blood and tissues—e.g., the anæmic, the cyanotic, those whose circulation is depreciated by fatty changes in their heart and other viscera, than upon those better supplied with oxygen. On the other hand, cases present themselves when, from the nature of the operation, the chloroforming is complicated by partial asphyxia, and these offer a contrast in that their danger reveals itself in respiratory difficulty leading even to cessation of breathing. I have found, however, that such cases responded readily to artificial respiration, and danger was over. Words give a poor idea of the contrast presented between these two categories of cases, but one has only to be brought face to face with them to be convinced that their difference is one of kind and not one of degree. Again, having once seen the heart relax and dilate under chloroform, as in Prof. McWilliam's experiments, one recognises the anatomical counterpart of the procession of events which one

had encountered again and again in the operating theatre. It would subserve no useful purpose to attempt to explain the discrepancies which appear between the experiments undertaken by the Hyderabad Commission and those of other observers, or to reconcile these results with those arrived at by the daily observations—now hundreds of thousands in number—made by medical practitioners in surgical cases, but it may be mentioned that it has been amply shown, by experience with the lower animals and man, that the more highly organised and differentiated nervous systems are more easily affected by reflex shock. Fainting caused by emotion, common in man, is not a daily occurrence among dogs or monkeys.

It may be remarked that it is singular that Prof. McWilliam's dilatation was not discovered by the Hyderabad Commission. The conditions, however, were wanting, for their animals were permitted to die or get *in extremis* through respiratory difficulties, so that stress of the anæsthetic was made more evident in most cases *quâ* the respiration than *quâ* the heart, although some of the cases must undoubtedly have revealed the condition had it been sought. A further point noticeable about dogs is that they are peculiarly susceptible to respiratory failure under chloroform, and in performing physiological experiments upon them the utmost care has to be used unless artificial respiration be employed to prevent death from cessation of natural breathing.

Under the last heading I inquired what conclusions practical men must arrive at when comparing chloroform with other anæsthetics, and here I will not press the point beyond instituting a rough-and-ready comparison between chloroform and ether, when both are administered by skilled persons employing good methods; and I am bound to say that ether, whatever may be urged against it, has fewer deaths to account for than chloroform. It has been said that chloroform kills at or during the operation, whereas ether kills afterwards. This is not my experience. One's kind surgical friends usually keep one well informed of untoward results following or traceable to the anæsthetic, and yet I have not found ether after-effects more severe or dangerous than those arising from chloroform. The subject of this communication is the administration of chloroform, so that I will dismiss this ether digression, and conclude by inquiring, Where does the above reasoning concerning chloroform leave us? I submit there exists a considerable bulk of direct evidence pointing to the truth of the existence of primary heart failure under chloroform, due to a distinct anatomical result of the anæsthetic, and that disregard of the pulse must tend to induce the anæsthetist to overlook the impending danger, while a careful watch over the colour and pulse, on the other hand, would give timely warning for measures to be adopted which would stave off the peril. Respiration must, of course, also be noted, as death may arrive through that channel. Skill and a lively sense of responsibility, which is not fear of chloroform, will do much to lessen deaths from that anæsthetic, but I submit the courage or recklessness begotten of a false sense of security must only end in still further increasing the death-rate from chloroform, already unnecessarily high. While thus contending that chloroform kills through the heart as well as the respiration, I would not be understood in any way to deprecate its use and value in suitable cases. Because we recognise its dangers it does not follow that those dangers assume an exaggerated appearance; indeed, the reverse effect is likely to obtain, especially if we at the same time learn how to recognise and guard against them.

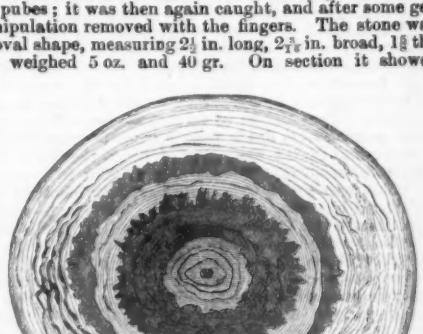
Mortimer-street, W.

SUPRA-PUBIC LITHOTOMY IN AMOY, CHINA.

BY SURGEON-MAJOR B. STEWART RINGER.

THE following notes on four cases of removal of stone from the bladder in the Chinese by the lately revived operation above the pubes may be found of surgical interest.

CASE 1.—Tian Lai, aged thirty, presented himself at the Amoy Chinese Hospital on March 18th, 1889, complaining that for many years he had suffered much pain in passing urine, and that for the last two weeks it had been constantly dribbling away. He seemed very weak, and bent his body forward as he walked painfully and slowly along. After examination with a sound a stone of large size was diagnosed, and, the patient being thin and a good deal wasted, it could be plainly felt by manipulation between the abdominal wall and the rectum. On April 12th, 1889, chloroform was administered, and between eight and ten ounces of warm solution of boracic acid (five grains to one drachm) were injected into the bladder and the base of the penis ligatured with a piece of thin indiarubber tubing, which retained the liquid perfectly; the bladder could now be felt above the pubes. No attempt was made to distend the rectum. An incision was made over the symphysis pubis and carried up in the median line towards the umbilicus for about four inches. The fascia and muscular fibres of the pyramidalis and the linea alba were carefully cut through to the full extent of the wound, then with the fingers and handle of the scalpel the glistening surface of the bladder was gradually exposed, the thin layer of fat with the peritoneum being scraped upwards towards the top of the incision, and held there out of harm's way by the fingers of an assistant. The bladder was now steadied by hooks and punctured near the upper portion of the skin wound with a sharp-pointed bistoury, which was carried in a straight line downwards towards the pubes. The index finger of the left hand was now quickly introduced into the bladder and closely followed by that of the right, and the stone, grasped between them, was brought upwards towards the wound, which, however, was not sufficiently large to allow of its extraction. The stone was therefore released and the wound lengthened towards the pubes; it was then again caught, and after some gentle manipulation removed with the fingers. The stone was of an oval shape, measuring 2½ in. long, 2$\frac{7}{16}$ in. broad, 1$\frac{5}{8}$ thick, and weighed 5 oz. and 40 gr. On section it showed a



Tracing of stone on section.

thick external layer of phosphatic deposit with alternating concentric layers within of a harder and darker material, probably uric acid. The patient believed it had been growing for more than twenty years. The bladder having been washed out with a weak solution of boracic acid, the wound was allowed to remain open, and a soft indiarubber catheter placed in the bladder, with the end hanging out at the pubic end of the wound, which was covered with a carbolised oil dressing and changed twice daily.

The recovery was very protracted, as eight days after the operation a large bedsore began to form over the sacrum and was a source of great trouble. Up to this time the temperature had not risen above 101·4°, but now gradually it increased to 103·4°. The sore was treated with lead lotion and iodoform ointment, pressure being removed as much as possible by means of an air cushion. The catheter had to be frequently changed as the urine contained mucus, pus, and phosphatic deposit in considerable quantities. On April 24th (twelve days after the operation) the catheter was removed from the wound and some urine passed by the urethra. On May 5th (twenty-three days after the operation) the temperature became normal and the general condition improved. On May 22nd the abdominal wound had nearly healed, the bladder had closed over and all the urine was passed by the urethra. The patient was, however, kept in the hospital for several weeks longer till the bedsore had completely healed. Some months after his discharge this patient again presented himself to seek advice about an abdominal swelling which had arisen since he left

the hospital. This was found to be a ventral hernia about the size of half an orange at the upper part of the abdominal cicatrix. He was advised to wear a band, but has not been seen since.

CASE 2.—Tek Liong, a Chinese boy seven years of age, with a stone in the bladder, was put under chloroform on Aug. 5th, 1889. A few ounces of a weak solution of boracic acid were injected into the bladder, and the penis ligatured. The rectum was not distended. An incision, 2½ in. long, was made from the pubes upwards. The bladder was reached in the same manner as described in Case 1, steadied with artery forceps, and opened with a scalpel, the wound being subsequently forcibly enlarged by the fingers; a stone with a rather rough surface, measuring 1½ in. long, 1⅛ in. wide, and ⅞ in. thick, and weighing 230 grains, composed chiefly of uric acid, was removed. A drainage-tube was placed in the bladder, one end being brought out of the wound, which was covered with carbolised dressing. The drainage-tube was removed on the third day, as this child was by no means amenable to treatment, and the crying and struggling produced when the tube was ta ken out to be cleaned seemed to be doing more harm than good, and as some hæmorrhage took place, blocking the tube and wound with blood-clots; these being removed, however, the urine flowed freely from the wound and gave no further trouble. The skin in the neighbourhood was kept constantly smeared with boracic acid ointment, to prevent excoriation, and folded cloths, which could be easily removed, were arranged to catch the dribbling urine. The highest temperature recorded was 102·2°. On Sept. 5th a little and on the 13th (thirty-eight days after operation) all the urine was passed by the urethra, the opening into the bladder having closed. The patient was discharged with the wound firmly healed on Sept. 25th.

CASE 3.—Tian, a Chinese youth aged seventeen, was admitted into the hospital, suffering from stone in the bladder, and on Sept. 10th, 1889, was placed under chloroform, and, the bladder having been distended with boracic acid solution, a stone was removed by an operation similar to that performed in the preceding two cases. The bladder in this case was drained by means of a catheter tied in the urethra. This was, however, removed on the third day after the operation, as it was thought to produce some irritation. The temperature, which had risen to 103°, subsequently fell, 101·2° being the highest point reached during the future progress of the case. The calculus, which was formed of uric acid, was of a flattened oval shape, 1⅜ in. long, 1⅛ in. wide, ½ in. thick, and weighed 242 grains. The treatment was the same as in Case 2. A small slough formed in the upper part of the wound, which separated thirteen days after the operation, leaving the surface beneath healthy. Ten days after the operation a little urine was passed by the urethra; the quantity increased daily until Oct. 9th (twenty-nine days after the operation), when all was passed by the natural channel. The patient was discharged on the 18th, with the wound firmly healed.

CASE 4.—Ki, a Chinese boy eight years old, suffering from stone in the bladder, was operated on under chloroform on Sept. 21st, 1889. Six ounces of weak boracic acid solution were injected into the bladder. The rectum was not distended. The calculus was, as in the three previous cases, extracted above the pubes: it weighed 77 grains, measured 1 5/16 in. long, ¾ in. wide, 7/16 in. thick, and was composed of uric acid, showing alternate layers on section. In this case the peritoneum was brought plainly into view at the upper part of the wound, as the child strained a good deal, as if about to vomit, during the early part of the operation, and a portion of the peritoneal sac was forced out, looking like a delicate thin bladder. As soon as observed it was, of course, kept out of danger by the fingers. The bladder was steadied by a loop of fairly thick carbolised catgut being passed through the muscular wall as near as possible to the upper part of the wound, and held firmly in position by an assistant. An incision was made into the bladder with a sharp-pointed bistoury, and the stone, being small and elongated, was readily extracted by the tips of the two index fingers. The bladder having been washed out with boracic solution, the edges of the wound were stitched together by means of interrupted carbolised catgut sutures about a quarter of an inch apart, through the muscular coat only; the skin wound was treated in a similar manner and a piece of narrow indiarubber drainage-tube placed between it and the bladder, with one end brought out over the pubes. The patient passed urine freely by the urethra the next morning and the drainage-tube was removed. The highest temperature recorded was 101·2°. The bladder was not quite watertight, as during the next four days a few drops of urine passed through the wound during each act of micturition, and on the fifth day, owing to the partial absorption of the catgut sutures, which were rather thin, the lower part of the abdominal wound had opened up and the same condition in a more limited degree had probably extended to the bladder, as the few drops were now increased to about a drachm. The wound, which looked perfectly healthy, was strapped for the next few days with adhesive plaster, and on Oct. 2nd (eleven days after the operation) no more urine passed by it, and the patient progressed favourably till Nov. 1st, when he was discharged with the wound firmly healed. He was seen again four months later. No local trouble existed, and the scar was perfectly sound.

The revival during the last few years of supra-pubic lithotomy, or the "high operation for stone," as it was formerly called, has been productive of much consideration on the part of surgeons as to the best methods of carrying out the details of the operation and the subsequent treatment of the patient. In this connexion the following short account of the history and various steps of the operation written nearly seventy years ago by J. Cloquet, at that time surgeon to the Hospital of Saint Louis, will doubtless be found interesting. The description appears in the "Dictionnaire de Médecine, Chirurgie, &c.," published in Paris, 1821–2, as quoted below:—"La taille 'hypogastrique,' ou la 'haut appareil,' fut d'abord pratiquée par Franco, qui ramenait la pierre au-dessus du pubis avec les doigts introduits dans le rectum. Rousset en suite proposa de faire saillir la vessie au-dessus du pubis en poussant une injection dans ce réservoir afin de l'ouvrir plus facilement. La méthode du haut appareil était tombée en discrédit lorsque le frère Côme la fit revivre; elle convient dans le cas de pierre très-volumineuse et dans quelques circonstances particulières. On la pratique en ouvrant d'abord la portion membraneuse de l'urèthre sur un cathéter introduit dans ce canal; on porte dans la vessie par cette incision la sonde à dard; on place le malade dans une situation horizontale; on fait une incision longitudinale sur la ligne blanche au-dessus du pubis; on éloigne le péritoine afin de ne pas l'ouvrir; on fait sortir le dard de la sonde de dedans en dehors à travers la vessie, et on s'en sert comme d'une sonde cannelée pour fendre cette poche membraneuse à sa partie supérieure; on extrait ensuite le calcul. Après l'opération, pour éviter l'infiltration de l'urine dans le tissue cellulaire du bassin, on place une grosse canule par la boutonnière faite au canal de l'urèthre, et une mèche de linge qui sert de filtre, dans la plaie supérieure."

The method of entering the bladder by means of a puncture through the membranous portion of the urethra, and subsequently draining it from the same opening, is an extremely interesting point, and for the latter purpose a very similar proceeding has lately been employed by Surgeon Bond of Leicester, in some special cases reported in his able article in THE LANCET of Aug. 10th, 1889, which I much regret not having been able to obtain earlier, as his clear and concise views would certainly have induced me to have closed the bladder wound in Cases 2 and 3. As it is, I am indebted to it for the ingenious method of fixing the bladder with a loop, as done in Case 4, which is most convenient, and vastly superior either to hooks or forceps.

In Case 1, finding the stone very large and the bladder irritable and inflamed, I thought it well to leave the wound open. In consideration, however, of the fact, which I have not seen noted in any of the cases perused, that a ventral hernia subsequently formed, I am inclined to think it would have been better to close the upper portion of the wound, which in this case was necessarily very long, to allow a stone of such magnitude to be extracted; and in all cases where the incision is of great length I believe an abdominal belt of some sort should be worn for some months after healing is complete. It will be observed that in none of the four cases was any attempt made to distend the rectum, partly because at the time of the first operation nothing suitable could be found, and partly because the distended bladder could be distinctly felt above the pubes, and in the three subsequent cases it was purposely omitted; yet in no case was there any great difficulty in reaching the bladder, and if care be taken, after dividing the skin, muscular fibres, and fascia, to use the fingers and handle of the scalpel in removing the cellular tissue and fat covering the surface of the bladder, there

will be but little danger of wounding the peritoneum. To reach the bladder easily, however, it is important to fairly distend it previously to operating, and in Case 2 it was noticed at the time that proceedings would have been decidedly facilitated had more liquid been injected. The bladder wall is sometimes remarkably tough; therefore, for opening it, a very sharp-pointed knife should always be provided. To extract the calculus neatly is not always so easy as might be imagined, for it being important to keep the opening in the bladder as small as possible, manipulation with the tips of the fingers, as advised, is not always practicable, and so little grasping force can be employed in that position that the stone, if large or smooth, may readily slip from between them. Polypus or some such forceps may be used, but I think a lightly made pair with fenestrated blades, on the same principle as the ovum forceps, would act admirably. In Case 4 the much greater rapidity with which the complete power of micturition returned, and the absence of any severe constitutional disturbance, strongly point, I think, to the advisability in uncomplicated cases of perfectly closing the bladder wound after the extraction of the stone, and this should be done with numerous unirritating sutures, such as carbolised or chromic catgut (Mr. Bond used silk), and undoubtedly the great point to be aimed at being to render the bladder water-tight, as in Mr. Anderson's case,[1] in which no catheter was used throughout, and no escape of urine took place through the wound, notwithstanding repeated and violent attacks of coughing. That surgeon further advises the bladder to be tested before closing the skin wound. It may, however, be necessary to draw off the urine in some cases, and this is best done with a soft india-rubber catheter every few hours after the operation, but should be omitted as soon as possible, particularly in children, who are sometimes very intolerant of the use of that instrument. The supra-pubic operation is much less difficult to perform than lateral lithotomy; it is sometimes almost bloodless, and, by careful attention to the points already mentioned, should have no additional risks; and in the cases of children and large calculi, where lithotrity is inadmissible, it would seem probable that it may become the operation of the future.

Amoy, China.

ELECTROLYSIS OF ANIMAL TISSUES.

By G. N. STEWART, M.A., D.Sc., M.B.,
GEORGE HENRY LEWES STUDENT.

A PAPER on this subject is being published in a volume of Memoirs from the Physiological Laboratory of the Owens College, Manchester. A preliminary account of part of the work was given in the Proceedings of the Royal Society of Edinburgh, June 18th, 1888, p. 399, and a short description of later results at a meeting of the Physiological Society in March last. I wish to give here a brief summary of the work and of the chief results. This paper was restricted to the chemico-physical changes, the physiological effects being left for a future communication. There were two preliminary questions to settle. 1. How much of the conduction in animal tissues is electrolytic? 2. What are the electrolytes? I have found that practically the whole of the conduction is electrolytic, and that the electrolytes are chiefly the inorganic constituents. When a tissue is electrolysed, almost the whole of the current passes by the salts. The changes produced in the proteids must therefore be brought about by secondary electrolytic actions. These changes were investigated (1) in simple proteid solutions, (2) in animal liquids, (3) in isolated tissues, and (4) in living animals.

1. In simple proteid solutions the effects vary to some extent with the current density (this was calculated from the intensity measured in milliampères). But in the solutions used alkali-albumin is always formed at the cathode, and acid-albumin at the anode, while in solutions of coagulable proteids there is also coagulation at the latter. With a strong current the proportion of coagulated proteid to acid-albumin formed at the anode is greater than with a weak current.

2. Blood, bile, and urine were the chief animal liquids investigated—blood for its own sake; bile and urine merely to illustrate the action of the current on complex solutions. Blood serum, entire defibrinated blood, and pure hæmoglobin solutions were used. There was no indication whatever that hæmoglobin or any derivative of it acts the part of an ion. At the anode in a pure hæmoglobin solution the reaction becomes acid, and acid-hæmatin is formed, which remains partly in solution and is partly thrown down, the liquid becoming less deeply coloured. When the current is strong or long-continued the hæmatin suffers further change, and is decolourised apparently by the nascent oxygen or chlorine set free. If a reducing agent is present at the anode, the hæmoglobin is not affected there by electrolysis. With proper adjustment of the strength of the current methæmoglobin may be seen to appear at the anode before acid-hæmatin, and they may be found together there. At the cathode alkali-hæmatin is formed; but its spectrum does not appear so soon as that of acid-hæmatin at the anode. In entire blood the changes in the hæmoglobin were similar to those described. The proteids of the serum and the corpuscles were partly coagulated at the positive pole. At the cathode they were more or less completely changed into alkali-albumin, according to the strength and time of flow of the current.

3. Striped muscle was the chief solid tissue observed. Microscopically, great changes were found in the fibres, the nuclei becoming very prominent in the parts near the anode, and the sarcous substance granular, the general appearance suggesting the action of a dilute acid, while at the cathode the fibres became more homogeneous than before. The striation was impaired. The chief chemical changes in the proteids were an increase in the neutralisation precipitate of the watery extract, and a corresponding decrease in the globulin at the cathode. At the anode the neutralisation precipitate was increased, but not so much as at the cathode. On the other hand, the globulin extract was more than correspondingly diminished, doubtless because part of the proteid was coagulated. The effect of electrolysis on the salts of muscle was studied by estimating the ash. Striking changes in the distribution of the salts were produced—changes sufficient, if produced within the body, to modify nutrition profoundly.

4. Experiments on electrolysis of tissues within the body (frogs and rabbits).

The effects of the current are discussed under four heads: 1. The chemical action of the poles. 2. The effect of the changes in the distribution of the salts (actual or potential). 3. The changes of temperature produced by the current. 4. The cataphoric action of the current. The antiseptic action of the current was studied in the case of ordinary putrefactive organisms, and it was shown that it is chiefly, if not entirely, around the anode that this action takes place. This is in accordance with the observations of Apostoli on charbon bacilli, published since my paper was written, and it explains the observations of Cohn and Mendelssohn on the effect of strong currents on micrococci. An attempt is made in the paper to connect our knowledge of the action of electrolysis with one or two of its applications in practical surgery and gynæcology.

Cambridge.

[1] THE LANCET, April 26th, 1890.

ON NYSTAGMUS.

By GORDON NORRIE,
COPENHAGEN.

DR. HADDEN'S paper on "Head-nodding and Head-jerking in Children, commonly associated with Nystagmus" in THE LANCET (Nos. 3485-3487) has been very interesting to me, because I have for some years attentively examined, as oculist, all cases of nystagmus which I have seen in my practice in Copenhagen. Dr. Hadden mentions a short paper on nystagmus which I two years ago published in the *Centralblatt für Praktische Augenheilkunde*, but since then I have seen several interesting cases. Alfred Graefe, and possibly the greatest number of ophthalmologists, supposes that nystagmus is caused by a myopathia, while I am convinced that the real cause is to be found in the innervation, and I think it is possible to show that this really is the case. I believe that it is much more natural to seek the disease in an abnormality of the innervation of the eye muscles than in the muscles themselves. In some few cases

it will be possible to find palpable abnormities in the brain. In the greater number of cases we are still unable to find any pathological alterations. I had just published an article on nystagmus in Danish when I received Dr. Hadden's paper, and I immediately resolved this time to write in the language of my ancestors instead of in German, hoping that my short article might be of some interest, as I am able to add some observations to Dr. Hadden's cases.

In general we find nystagmus in both eyes, and nearly always the movements are synchronic and symmetric. Only a few cases are known where the movements was vertical in one eye and horizontal in the other, as Dr. Hadden has seen it, or asymmetric and asynchronic. If the nystagmus depends on a myopathia, an anomaly in the muscles, it is logical to suppose that the corresponding muscles of the two eyes are affected at the same time and in the same degree. If the nystagmus in the one eye is thought to depend on a myopathia of the right rectus internus, I suppose one must come to the conclusion that the left rectus externus at the same time is affected, or it possibly is better to suppose that both recti externi and interni in both eyes are affected. Which sort of myopathia founds the hypothetic cause is quite unknown. I cannot think that it is possible to explain the symmetry and the synchronism in any other way than by supposing that the nystagmus depends on an abnormality—functional or organic—of the central mechanism of innervation. In some few cases it is possible to prove the theory of innervation. I shall shortly communicate three cases.

CASE 1. *Hypermetropia, macula corneæ dextræ, atrophy of both optic nerves; nystagmus horizontalis of both eyes.*—Anna Dorothea W——, aged twenty-six years ("Magdalene"), consulted me on Jan. 16th, 1890, for a conjunctivitis. She has manifest hypermetropia, 1·50 D.; vision of right eye $\frac{6}{15}$, at left eye $\frac{6}{9}$. There is horizontal nystagmus in both eyes, but when she reads a word at the usual reading distance the nystagmus immediately ceases. At the moment the left eye, the better one, is covered up, and she reads with the right alone, the nystagmus returns in both eyes.

CASE 2. *Aphakia of the left eye; nystagmus.*—Aage M——, aged seven years, was brought to me on Jan. 7th, 1888, for cataract in the left eye. I did not observe nystagmus, and I do not believe that there was anything of that kind; a week afterwards I extracted the cataract. The first time I saw the nystagmus was on Sept. 12th, 1888. With the operated eye he could count fingers at a distance of six metre. In general the eyes were quite tranquil, but at the moment the right eye was covered up the nystagmus was seen in the left eye. The movements were horizontal, but accompanied by a rotation of the eyeball round its axis. When the eye was turned towards the nose the nystagmus ceased; in all other directions it was visible, especially when the eye was turned outwards. If the right eye was covered with the hand, it was easy to see that the nystagmus never appeared in the left eye alone, but always in both eyes at the same time. On Feb. 26th, 1889, I noted that when he looked binocular there was no nystagmus, but it appeared when he used the left eye alone, not, however, when he looked to the right. Nystagmus was always binocular. It was not necessary to cover the right eye up, the nystagmus appeared also when the point of fixation was moved so far to the left that the nose prevented the fixation with the right eye. On Feb. 28th, 1890, I have observed that it was in the same condition.

In these cases I think it is quite evident that it is the innervation in which the cause is to be found. In both cases the nystagmus only appeared when the patient used the weak eye, but it never appeared in one eye, but always in both. In the following case it is also necessary to explain the nystagmus in the same way, although one of the muscles really was affected.

CASE 3. *Scleritis in the right eye; nystagmus circularis of both eyes.*—Anna M——, aged twelve years, was brought to me on March 4th, 1890. In the right eye there was scleritis of 3 to 4 mm. from the cornea, with considerable infiltration, which undoubtedly affected the rectus externus. When looking to the right and left, and only in these directions, nystagmus appeared in both eyes. The nystagmus was circular—that is, the centrum of the cornea described a circle or ellipsis, a form of nystagmus which I think is not very rare. As the patient was nearly cured the nystagmus was very slight.

In cases in which the nystagmus is complicated with head-jerking, it is also the most natural way to explain the movements as caused by an abnormality of the innervation. Dr. Hadden describes excellently this disease, and agrees with Henoch and Hughlings Jackson in the theory of innervation. I have seen one case of head-jerking and nystagmus in both eyes in a man, and three cases of head-jerking with uniocular nystagmus in children.

CASE 4. *Hypermetropia; amblyopia of the left eye; nystagmus; strabismus convergens relativus of the left eye; head-jerking.*—Carl B——, aged twenty-two years, machinist, consulted me on June 19th, 1890, for corpus alienum corneæ. On June 29th, 1890, I noted: "Manifest hypermetropia, 2·50 D.; vision of right eye $\frac{6}{6}$; with the left one he only counts fingers at five feet. By ophthalmoscopic examination the hypermetropia is estimated to be 5·0 D., without any abnormality of the eye ground. When he looks straight forward or to the right or the left, especially when he looks to the right, the movements of the eyes are rotating very fine and very rapid. At the same time the movements of the head are small and horizontal. The movements of the eyes are much more rapid than those of the head. By looking upwards and downwards the nystagmus disappears. When he uses correcting glasses (+2·50 D.), and reads a word in the common reading distances, the scene alters. The movements of the eyes are then larger, slower, horizontal, and springing (I mean something like a pulsus celer), and at the same time the strabismus convergens appears. The movements of the head also grow much larger. He cannot tell the history of his disease, but he supposes that the head-jerking began last winter, when he had very much to read, and did not use spectacles. There was no symptom of myelitis or any other abnormality. The movements of the pupils and the ordinary movements of the eyeballs were unimpaired."

CASE 5. *Head-jerking and uniocular nystagmus; recovery.*—Charles K——, aged nine months, son of a painter, was brought to me on April 28th, 1888, for an erythema of the eyelid. There was nystagmus on the left eye and head-jerking. The parents had observed the movements very soon after the birth, and did not know any cause. After atropinisation no abnormity was found in the eye, and a week or two afterwards the movements disappeared. It is this case which I have communicated to the *Centralblatt für Praktische Augenheilkunde* (1888), and to which Dr. Hadden refers.

CASE 6. *Head-nodding and uniocular nystagmus; recovery.*—Carla B——, aged eight months, daughter of a tinker, was brought to me on Feb. 17th, 1889. She was a strong and healthy child, but she looked rather silly. There was a history of a fall on the floor from a sofa a month and a half ago, but she seemed not to have hurt herself. She cut two teeth some days ago (she had three). The mother had for some time—but she did not know how long—observed the movements of the head. The head is nearly always turned to the right, and there is a constant slow nodding. When she looks to the right a very rapid nystagmus of the left eye immediately appears. In general the nystagmus is circular, but when she looks hard to the right the nystagmus is horizontal. The right eye is always quiet, and the ordinary movements of both eyes unimpaired. The right half of the left iris is brown, the other half and the right eye are blue. Round the left disc is seen a dark stripe of pigment, but no other anomaly. I found the same on Feb 20th, 1889. I did not see the child again before Dec. 29th, 1889, and then the movements had long ceased. She is a pretty little girl, not at all of a weak intellect. Quite the same on July 4th, 1890.

CASE 7. *Head-jerking and uniocular nystagmus.*—Emmy B——, aged eleven months, daughter of a watchmaker, was brought to me two days after the patient just mentioned, on Feb. 19th, 1889. Three months previously she fell from the cradle to the floor, striking the back of her head. Immediately afterwards she vomited and for some few hours was drowsy. Some days afterwards horizontal movements of the head were observed, and "the white of both eyes was red from extravasated blood." Nystagmus was not observed before I saw her. The eye movements are always in the right eye, never in the left. They are horizontal, small, and very rapid. Usually she turns the eyes to the left. No other abnormity was found. On March 4th, 1889, I found that the nystagmus had disappeared; the movements of the head nearly so. On April 4th, 1889, still from time to time there are slight movements of the head; no nystagmus. The child died in the following summer of diarrhœa.

These three cases are evidently quite analogous to Dr. Hadden's. In the last an injury of the head, surely,

was the cause, as in Dr. Hadden's Case 5. I have nothing to add to his mention of the symptoms; I agree completely with him. I have still seen two cases of unilocular nystagmus. In one of them, which I have communicated in *Centralblatt f. Prakt. Augenheilkunde* for 1888, the patient suffered from *sclérose en plaques*, and was nearly blind from atrophy of the optic nerves. He was forty-three years of age, and had his illness about twenty years previously. Also in this case the cause of the nystagmus undoubtedly is in the nervous system, and I think this is so, too, in the last case, where I, in a little girl aged eight months, observed horizontal nystagmus of the right eye, in which she was blind (cataracta polaris posterior). I think that this eye soon will begin to squint, and that the nystagmus then will disappear.

EUCALYPTUS GLOBULUS.

BY HARRY BENJAFIELD, M.B.

WHILST writing this I am surrounded on all sides with plants of eucalyptus globulus, from the tiny seedling a foot high to the huge blue gum (as the tree is known here) towering up some 300 feet. The medicinal virtues of its leaves have been long known, the aboriginal inhabitants of our beautiful island knowing of and using them for various troubles. But our knowledge has never, so far as I know, been tabulated, and we labour at great inconvenience in prescribing it. The Bushmen often tell me of cures "by blue-gum leaves." One has applied the raw leaves to patches of rash; another has kept a joint affected with rheumatism enveloped in them; mothers tell of wonderful cures of diphtheria by enveloping their patients in clouds of steam from hot leaves covered with boiling water; other people, again, swear by infusions of the leaves taken in wineglassful doses for all sorts of internal troubles. In fever cases nearly everybody hangs them about the bedroom of the patients, and in various lung troubles the leaves are burnt or smoked so that the patient inhales the smoke. We have a great variety of eucalypti, most of which are found in the other colonies, but Tasmania is the home of the eucalyptus globulus; indeed, it is very doubtful whether it is indigenous to any other country, only stray plants occurring in Australia, and our Bushmen never dream of using any other variety as a medicine. When held up to the light the essential oil is seen in tiny globules scattered thickly through the leaf cells, and the most active medicinal properties appear to exist in this oil. Hitherto but little opportunity has been given to test the medicinal powers of eucalyptus globulus, as practically none has found its way into the market. The eucalyptus oil sold as given by Martindale and others is distilled from, as Martindale puts it, "the leaves of eucalyptus amygdalina as well as eucalyptus globulus, and probably other species." This is quite true. A man who had worked for years in various Australian distilleries told me that he had seen but two eucalyptus globulus trees, and they were carefully preserved to show visitors. But our people would no more think of using peppermint (eucalyptus amygdalina) for their ailments instead of blue gum than your people would use oak instead of senna leaves. The peppermint is quite unknown here as a medicine; it grows as a low shrub or stunted tree on dry, rocky hills, with thin small leaves, which are rich in its peculiar camphorous oil. But the eucalyptus globulus luxuriates in wet ground, produces large scimitar-shaped leaves, and is in many ways the true "fever" tree. It contains but a small percentage of oil, and the oil is difficult to extract, but when obtained it is very superior to that from other eucalypti. Hang a bunch of other eucalypti, such as E. amygdalina, in a bedroom, and a bunch of this in another, and one soon recognises by the smell and air of the room the difference in the two.

For some years medical men in Tasmania have been using eucalyptus globulus in medicine, and with excellent results. The following occurred in my own child, aged two. For four months she lay ill with infantile remittent fever, until she was reduced to a little skeleton, which we carried on a pillow. A chart of her temperatures lies before me, but far too long to copy. The chief feature is its irregularity. One day a high morning temperature would be normal by night; on another day it would be highest at noon; another day would follow with a normal morning and mid-day temperature, to rise to 103° at night. Thus it ranged from normal to 104° all through the four months, with anorexia, constipation, chills followed by sweats, &c. Every drug I could think of was tried with Pack's graduated bedroom temperatures, diet, &c. Over and over again did we return to quinine, arsenic, &c., but they seemed to have no effect whatever. Searching through various materia medica, I dropped upon an article in an American book on eucalyptus globulus which seemed to fit the case. Some blue-gum leaves were soon obtained and a rough infusion made and given in teaspoonful doses. The first dose seemed to break up the fever, and with the exception of a little rise in temperature for one day a week afterwards she had no return until a year later, when she again sickened, and after other remedies had failed, blue gum again asserted its power, and she has since been strong and robust. Since then I have been constantly using it in fever cases taking on a remittent type. In the latter stages of typhoid, when relapses are so troublesome, it does better than any drug I have yet seen, not only acting on the fever, but I believe by its antiseptic power helping to destroy the fever germs in the system. For these cases I give teaspoonful doses of an infusion of the leaves every two hours; perhaps the oil may do as well, but I do not take kindly to it in these cases. In nasal catarrh the oil seems to me to act as a true antiseptic when sniffed up the nose as vapour, or just put a few drops into the palms of the hands and sniff up strongly. It is gaining great repute here for stopping these colds. When I find one coming on I carry a small bottle in my pocket, and take a few good sniffs occasionally as I drive along. In the essential oil we notice a great difference in smell, taste, and other characters between eucalyptus globulus oil and peppermint. That from eucalyptus globulus is an oil, the other is more spirituous in character, and for rubbing into rheumatic joints is far preferable. For injections the eucalyptus globulus to my mind is by far the best. As previously mentioned, for fever cases I like an infusion of the leaf as the purest preparation of the drug I can get, and when using the oil I like the first distillate. After rubbing up a green leaf between one's fingers a sticky oily feeling remains, and the first distillate of eucalyptus globulus is very like it; this to my mind contains valuable properties which are damaged or lost in treating with potash redistillation, &c. Other medical men here have had large experience with these eucalypti, and they tell me they always use eucalyptus globulus when giving it for fevers. Mr. Hardy gave me a striking case of scarlet fever which he treated by putting the patient in a hot eucalyptus globulus bath when she seemed *in extremis*, and with excellent results. In diphtheria it not only acts as a germicide and antiseptic to the throat, but helps to break up the relapses of fever. I am now trying it on ringworm, leucorrhœa, &c., but my observations have not been sufficiently careful to warrant any statement of its virtues in these affections.

Tasmania.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

A CASE OF POISONING BY CYANIDE OF POTASSIUM.

BY FREDK. A. HESLOP, L.R.C.P., L.R.C.S. EDIN.,
POLICE SURGEON, BLACKPOOL.

J. R——, aged thirty-two years, photographer, took an overdose of cyanide of potassium between 12 A.M. and 2 P.M. on Oct. 9th. I made the post-mortem at 10 P.M. the same day. The skin was pale, except the sides and back, which were livid; there was much frothy mucus escaping from the mouth, and on wiping the froth away I found the lower lip red and corroded; the mucous membrane inside the mouth was white and easily stripped off. The hands were clenched, and the finger nails of a deep blue colour, and the toe-nails presented a similar appearance. On removal of the skull-cap, the dura mater was found adherent to the arachnoid, and the membranes and surface of

the brain were deeply congested; on section a few minute red points were observed. The heart, the right side, was found dilated and contained dark-blue clotted blood; the left side was contracted and practically empty. There was a large deposit of fat, otherwise the heart was normal. The lungs on removal presented a dark congested and mottled appearance. On section, frothy exudation followed, the lung tissue was crepitant throughout. There was no disease of the lungs. The peritoneal surface of the stomach was of claret colour. On cutting the organ open it was found empty; the mucous membrane was thickened and congested in patches, especially towards the pyloric end—these patches were observed at intervals almost throughout the small intestine. The liver weighed seven pounds and a half. The kidneys were enlarged. The remaining organs were normal. The washings of the stomach presented the usual tests for cyanides. A few comments on the case may be made. Cases of poisoning by cyanide of potassium are of rare occurrence, though the salt is largely used by photographers. The few cases of poisoning which have occurred have been in connexion with this trade, as in this case. The salt is usually adulterated with carbonate of potash; probably this caused the signs of corrosive poisoning, whilst the cyanide of potassium itself was the immediate cause of death by paralysing the respiratory centre. There was a history of alcoholism of two years' duration; this intensified the congestion of the membranes of the brain, and would also account for the enlarged liver and disease of the kidneys.

Blackpool.

GANGRENE AFTER TYPHOID FEVER.

By WILLIAM GOSSE, L.R.C.P., D.P.H. CAMB.

NOTICING Dr. Dawtry Drewitt's communication on the Rarity of Gangrene after Typhoid Fever, the following case occurring in the Murston epidemic may be of interest.

Fred. P——, aged eighteen years, a brickmaker, fair and spare, with family history of phthisis; heart normal. The onset was sudden and influenza-like, with temperature occasionally reaching 105° F.; but after the third week, when he was removed to the Infectious Hospital, it never exceeded 102°, and at the end of the fifth week of the fever it became normal. There was no excessive diarrhœa or hæmorrhage, but the patient was very asthenic and torpid. The convalescence was slow, with disinclination for exertion, the feet and legs being œdematous. At the third week of convalescence the dorsum of the left foot became first purple, then mottled and gangrenous, and extremely sensitive. Perchloride of iron and quinine were given, and boric fomentations applied to the foot and leg. In a few days a line of demarcation formed, enclosing an area of about twelve square inches. It was then poulticed with linseed-meal and carbolic oil. The slough came away in a week, exposing the tendons and muscles; this had nearly granulated up when the patient was discharged in the ninth week of convalescence. In considering the pathology of the case, the œdema appears due to cardiac weakness, as there were no varicose veins. The gradual onset points rather to thrombosis than to embolism of the anterior tibial artery, which is also rendered more probable by the fact of the patient being an amateur sprinter, the artery being supported by muscles until it reaches the ankle-joint, where it would be exposed to injury and strain, and where the occlusion most likely occurred. There was no sudden pain in the limb, such as would be caused by the impaction of an embolus.

Sittingbourne.

TWO CASES OF CHLOROFORM NARCOSIS, WITH NECROPSIES.

By F. KNOWLES, L.R.C.P., M.R.C.S.

HAVING recently been called in by our coroner to examine two cases of death from chloroform, the following brief notes may be of interest.

The first case was that of a well-nourished woman, aged thirty-four, an idiot, who died after inhaling less than three drachms of chloroform. On examination, the pericardium was healthy, the heart normal in size and position, slight deposit of fat on outside, muscle rather pale, but presenting no distinct evidence of fatty degeneration. Valves all competent and healthy; no atheroma of aorta. The lungs were both studded from apex to base with miliary tubercles, and there was an old cavity the size of a walnut in the apex of the left. The intestines contained numerous typical tubercular ulcers and many scattered grey tubercles. All the other organs were fairly healthy. In the second case the subject was an emaciated boy aged seven. Here again the heart was healthy; no fatty changes in the muscle; the valves competent and perfectly healthy, with the exception of a very small patch on the anterior flap mitral valve, which appeared slightly thickened. The lungs were extensively diseased, the right being bound down throughout its greater extent with old pleuritic adhesions, and the lung itself collapsed at the base; the left lung was practically absent, being represented by a mass of soft caseous matter. The kidneys were large and congested, the right containing a small abscess. The spleen and liver were large (amyloid). The right knee-joint was one bag of pus with drainage from two places. In both these cases the heart was distinctly noticed to beat after the respiration had ceased, and in both that organ was in a healthy condition, while in both instances there was extensive disease of the lungs, and consequent diminished breathing capacity—in the first case by at least one-third, and in the second by even more than that. The practical inference here is that the lungs have quite as much to do with the risk of chloroform anæsthesia as the heart has; and it is quite as essential that before giving this anæsthetic the lungs should be examined as it is that the heart should be stethoscoped. In both cases death occurred before the intended operation was commenced.

St. Helens.

TURNING TWELVE HOURS AFTER RUPTURE OF MEMBRANES.

By GEO. H. BUTLER, L.K.Q.C.P.I., L.R.C.S., L.M.

THE following is a report of a case I have recently attended which I think possesses some features of interest.

One morning recently, soon after 5 o'clock, I was called to a case about two miles from my house. The husband, who brought the message, said his wife had been in labour since early in the afternoon of the previous day, that the midwife had been with her all night, and now had sent him for me, as it was a "medical case." He added that a part of the child had been born ever since 5 o'clock of the previous afternoon. I attended as soon as possible, and, on arrival, found the woman to be a multipara, aged forty-two, and on examination found the hand and arm of a fœtus protruding from the vulva. The membranes had ruptured about 5 in the afternoon, and almost immediately the hand was protruded from the vagina, and shortly afterwards the arm as far as the elbow-joint. The woman's strength seemed very well maintained, and the pains had not been very frequent or strong through the night, so I determined to make an attempt to push up the presenting arm and turn. This I was unable to do without chloroform, the uterus becoming strongly contracted round the child as soon as my hand entered it. However, on putting the woman thoroughly under chloroform, after some difficulty and perseverance, I was able to reach a foot and bring it down. Delivery was accomplished in about twenty minutes, there being some delay as the head passed through the brim and outlet. The child was a very large one, and when I saw its proportions I was surprised at the comparative ease with which turning was accomplished after the membranes had been ruptured so long. It was stillborn, and its position in the uterus was abdomino-anterior. The mother is making an excellent recovery. I took care to impress upon the midwife not to delay in sending another time if such a case should come under her notice.

Whitchurch.

THE LATE SIR EDWIN CHADWICK.—By the will of the late Sir Edwin Chadwick, of Park Cottage, East Sheen, the Trust Fund (subject to certain specified conditions) is to be applied, as his trustees shall direct, for the advancement of sanitary science; and by a codicil the testator suggests that his trustees may offer a Cup of the value of £20, to be given annually for a term of years to sanitary authorities at home or abroad showing the greatest reduction in the death-rate of the population in their district.

A Mirror OF HOSPITAL PRACTICE, BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv. Procemium.

THE LONDON HOSPITAL.

TWO CASES OF NEURITIS; RECOVERY; REMARKS.

(Under the care of Dr. SANSOM.)

THESE cases of neuritis come under the classification adopted by some writers—that of infectious multiple neuritis. The condition is one of considerable interest, and Case 1 is especially so from the absence of history of definite cause. In connexion with this case it is worth remembering the theory of Löwenfeld,[1] that pathogenic bacteria in certain cases, instead of producing the corresponding disease, may directly, or after certain prodromal symptoms, cause extensive inflammatory or degenerative changes in the peripheral nerves. For the following notes we are indebted to Mr. Ernest J. Reynolds, house physician.

CASE 1.—J. P——, a Jewess, aged thirteen years, was admitted to the London Hospital on April 28th, 1890, suffering from partial paresis of both legs, accompanied by pains in the calves. The patient stated that eight weeks before admission she had pain in the calves on going upstairs; on the next day she was quite unable to walk. The pain in the legs remained intense until her admission. Previously her health had been perfectly good, except that she had a slight attack of sore-throat, but she was not quite clear as to whether this was antecedent to or coincident with the onset of the paralysis. On admission, her condition was as follows: Plantar reflex and knee-jerk absent on both sides, there was atrophy of the extensors of both legs, and the feet were "dropped." Voice and speech were not affected, but the tonsils were distinctly enlarged. The electrical reactions were as follows: No reaction to faradaism in anterior tibial muscles of either leg, and at the same time marked reaction of degeneration in both legs. Patient was treated with general tonics, and galvanism was applied to the legs, and she progressed slowly but continuously towards recovery.

CASE 2.—E. L——, an anæmic girl, sixteen years of age, was admitted into the London Hospital on July 9th, complaining of weakness in her legs, which had lasted for three weeks. The nasal tone of her voice being remarked, inquiries were made as to the presence of sore-throat, but the patient had noticed nothing except slight pain. There was, however, a marked history of regurgitation of fluid through the nose. She had also noticed difficulty in reading and some diplopia rather more than three weeks before admission—that is, a short period before the onset of failure of power in the legs. The physical signs on admission were as follows: The voice had a peculiar nasal tone; the soft palate did not lift when the patient was made to articulate "Ah." There was internal strabismus; the knee-jerk was absent on both sides; the feet were "dropped." The patient walked with a peculiar tired, heavy gait. The electrical reactions were: No response to a faradaic current that would make a healthy muscle react, while on using galvanism the reaction of degeneration was well marked in both legs. The patient rapidly improved under treatment and has now regained complete power over her legs, and the palate lifts on phonation.

Remarks by Dr. SANSOM.—These cases are chiefly interesting from the point of view of etiology. There is little difficulty in regard to the second case in ascribing the paralyses to diphtheria. The signs of involvement of the palate, the ciliary muscle, probably of one or more of the ocular muscles, and at a later date of the muscles of the lower limbs—all indicated by the history of the case previously to the patient coming under our observation—justify the diagnosis of diphtheritic paralysis in its ordinary course. It is true that there was no history of an attack of diphtheria; but such omission in the category is by no means uncommon. We find some patients denying that sore-throat has ever been an antecedent, yet remembering afterwards that they had transient symptoms to which they paid very little heed; others who have complained of few or no throat symptoms have been known to reside in districts where diphtheria has been prevalent; and in some there is no direct evidence of causal relation with diphtheria whatever. Nevertheless, the definite course of the nerve lesions is sufficient to establish the diagnosis. In the first case (first in order of admission) the evidence of cause is much more obscure. The onset of the paralysis was not at all like that obtaining in cases of diphtheria. It was strikingly similar to that occurring in peripheral neuritis due to alcohol. But alcohol as a cause was entirely excluded. From want of evidence we may be obliged to class some of such cases under the head of "idiopathic" neuritis, but it is obviously undesirable to do so; the term "idiopathic" is but a cloak for our want of knowledge. There was in this case the history of an attack of slight sore-throat, and the tonsils were enlarged, though there was no evidence whatever of implication of the soft palate. We may ask, Are there some forms of throat affection other than diphtheria which may be followed by neuritis different from that known as diphtheritic paralysis? On this point I have had some evidence. For instance, I observed the case of a gentleman aged forty-seven who in the early spring of this year suffered from an attack described as tonsillitis, with a relapse. In May I noticed that there had been some loss of substance from the tonsils and some pharyngitis. At the end of May there was much general muscular tremor, and I found that, though there was no difficulty in swallowing, nor affection of voice, nor even impairment of the power of lifting the veil of the palate, the uvula and the velum manifested a distinct tremulousness on efforts at deep inspiration. The chief sign, however, was pain which was referred to the left trapezius muscle. Treatment little influenced the severe pain, and the patient became much pulled down. He tried a voyage to Norway without benefit, and, lastly, Aix-les-Bains. After a course of treatment there the pain ceased, but its disappearance was preceded by severe neuralgia in the left side of the face. Here, also, was an instance, which I take to be of neuritis, with chiefly sensory manifestations, differing from diphtheritic paralysis, but preceded by a form of ulceration of the throat. In another case of a boy of twelve I could get no history of any throat ailment, but on May 16th, whilst in the country, he manifested pyrexia, temperature rising to 102° F., and giddiness, followed by weakness of the lumbar muscles, so that at first he had to pull himself upstairs by the banisters, and afterwards he could not sit up in his bed. He suffered also pain running down the thighs to the gastrocnemii. I had several opportunities of examining him, and I came to the conclusion that his was a case of peripheral neuritis, due to a zymotic cause. There are other cases of peripheral neuritis now in our wards which require careful study.

[1] Munchen. Med. Wochen., 1888.

SOUTH DEVON AND EAST CORNWALL HOSPITAL, PLYMOUTH.

A SERIES OF RENAL CASES IN WHICH OPERATIVE PROCEDURES WERE REQUIRED; REMARKS.

WE commence this week a series of five cases in which exploration of the renal pelvis was performed for symptoms of calculus, and in two of the three cases which we give below the diagnosis was confirmed, and a calculus removed by the lumbar operation. The condition of the parts at the time of operation will not often permit of the operation for removal of renal calculus to be completed at one stage, and primary union of kidney and more superficial structures obtained without drainage. This, which may be called the perfected operation, has been successfully attempted by Le Dentu,[1] the patient being completely well on the eighteenth day. It will be noted that some trouble was met with in more than one of these cases after the stone had been extracted, and that in each this somewhat alarming

[1] Le Bulletin Médical, 1889

condition was arrested by plugging of the wound, and in one case iced boracic acid solution was useful when oozing continued after removal of the plugs. For the notes of these cases we are indebted to Mr. E. Gifford Nash, house surgeon.

CASE 1. *Renal calculus; nephro-lithotomy; recovery.* (Under the care of Mr. Swain.)—W. B——, a shoemaker, aged twenty-four, a native of Cornwall, was admitted on Oct. 8th, 1889, with a history of an attack of pain in the left loin three years ago, which radiated into the groin and the lower abdomen, and lasted a few minutes, making him feel sick. These attacks have recurred since about once a week, and have sometimes been followed by hæmaturia. The pain has been aggravated by jolting movements, such as driving on a rough road. He is fairly healthy in appearance. There is tenderness in the left loin on deep pressure, but no enlargement of the kidney can be detected. Urine (sp. gr. 1008) contains a slight trace of albumen; a few blood cells can be seen under the microscope, but no crystals.

On Oct. 18th, under methylene, an incision three inches long was made between the last rib and the crest of the ilium on the left side. The kidney was felt high up. A small calculus was detected in the pelvis of the kidney. This was fixed between the fingers and extracted through an incision in the cortex of the kidney. Free hæmorrhage took place from the incision, and the wound was plugged with oiled gauze and a sponge. The plugs were removed the same night and sharp hæmorrhage again took place; the wound was syringed with iced boracic lotion until the hæmorrhage ceased, then a large drainage-tube was inserted and a pad of wood-wool wadding applied.

Oct. 19th.—Fourteen ounces of blood-stained urine passed in the night. No more bleeding from the wound.

21st.—Urine acid; no blood. Wound looks well.

On the 22nd and 23rd the tube was shortened and four stitches were removed.

27th.—The urine which escapes from the loin remains clear, and is gradually decreasing in amount.

Nov. 12th.—Wound granulating up. Very little urine escapes from the loin.

24th.—There is still a small sinus, from which a little urine escapes. Patient is improving rapidly.

27th.—Wound all but healed.

Dec. 8th.—Got up last night. Temperature 99°.

14th.—Wound healed.

16th.—Urine acid; no albumen.

22nd.—Discharged looking fat and well. He has no pain whatever. The calculus, which was about the size of a pea, weighed six grains, and consisted of oxalate of lime.

He wrote on Sept. 12th, 1890: "I never felt better than I do at present. I do not feel any pain whatever, and seem to be perfectly well as to my urine. It is a pleasure for me to walk now compared with what it was before."

CASE 2. *Nephralgia, oxaluria, pyuria; exploration and puncture of kidney; relief.* (Under the care of Mr. Whipple.)—S. S——, a grocer's assistant, aged forty-nine, was admitted on June 4th, 1890, with a history of renal colic and frequency of micturition. He stated that seven years ago he suffered from a sudden attack of pain in the right loin, which lasted about two hours. He then began to suffer from frequency of micturition, and has been in the habit of getting up two or three times a night to pass urine. About the middle of January he had a second attack of pain in the right loin, and since then has had repeated attacks. These attacks have usually occurred after a long walk, and have lasted a few hours. He has not been sick during any attack. The pain has started in the loin, and radiated to the groin and hypogastrium. The frequency of micturition has been worse after the attacks of pain. The urine has been high coloured, but he has not noticed that it contained blood. Patient is a small, thin, pale-faced man with anxious, worn expression, complaining of pain in the right loin, radiating to the right groin and testicle, and at times to the opposite loin. He passes urine every twenty minutes or half-hour by day, and two or three times by night. After passing urine he feels as if there were something more to pass. Urine acid, sp. gr. 1010; contains a trace of albumen, and under the microscope are seen a few pus and blood cells and oxalate of lime crystals.

June 4th.—Bladder sounded; no stone discovered.

6th.—More pain in the right loin. Passed urine five times during the night, fifty ounces in twenty-four hours.

7th.—Urine thirty-six ounces; passed five times in the night. A mixture containing bicarbonate of potash and tincture of hyoscyamus was ordered.

8th.—Urine passed six times in the night, alkaline. Under the microscope numerous phosphatic crystals and crystals of urate of soda and oxalate of lime were seen. There is marked tenderness over the right kidney.

From the 17th to the 23rd the patient suffered less pain. He voided urine every two hours. Nitro-hydrochloric acid given instead of alkalies.

July 2nd.—Urine acid, sp. gr. 1020, contains a trace of albumen. Patient complains of soreness across the loins and at the tip of the penis. Urine passed every half-hour; more frequently since taking acid mixture.

7th.—Urine contains a few pus cells and oxalate of lime crystals.

13th.—Urine passed every three-quarters of an hour by day and four or five times by night.

16th.—Pain in the right loin much worse. Urine, containing pus cells and oxalate of lime crystals, is passed every half-hour.

18th.—Under methylene an incision was made in the right loin, parallel to and just below the last rib. The kidney was exposed and palpated between the finger and thumb. No hardness was detected. It was then punctured with a harelip pin in five places; nothing was felt. A large drainage-tube was inserted reaching down to the kidney, and the lumbar incision sutured. The urine was stained with blood for a few hours. The wounds healed by first intention, except where the tube was inserted. The urine passed averaged between fifty and sixty ounces daily. On July 23rd the urine did not contain albumen. He was discharged on Aug. 18th, the symptoms having almost entirely disappeared.

On Sept. 14th he wrote: "I have had no return of pain in the loin, and feel much stronger. I pass urine six times in twenty-four hours without pain."

Before admission this man was in the habit of eating very large quantities of rhubarb with every meal. Since then he has not touched it, which may partly account for the improvement in his symptoms.

CASE 3. *Renal calculus; nephro-lithotomy; recovery.* (Under the care of Mr. Whipple.)—S. D——, a shoemaker, aged forty-five, was sent to the hospital by Mr. Braund on July 15th, 1890. The patient had been a police constable, then a porter, and for the last year a shoemaker. He began to suffer from pain in the right loin in 1869, and in the autumn of that year first passed blood in his urine. The pain at that time used to come on in paroxysms, lasting three or four hours, and occurring at intervals of two or three weeks. He often vomited when the pain was severe. At the same time he had pain in the right testicle and retraction. There was also pain in the right groin. At that time he used to get up once every night to pass urine. In 1874 he began to pass some gritty masses about the size of a pea, and has occasionally passed them until a year ago. The only pain in the penis has been whilst passing these. Four years ago he fell from a horse. This was followed by a great deal of pain in the right loin, and for two weeks he passed bloody urine every few minutes. The attacks of pain in the right loin and testis, retraction of testis and numbness of thigh, have continued down to the present time. Five weeks ago he experienced a great increase of all his symptoms, and had to give up work. The pain was dreadful, and continued day and night. It was constant in the right loin, and extended down to the right testicle. The urine was bloody, and continued so until a fortnight ago. The pain has prevented his sleeping. He has never suffered from headache, and there has been no pain on the left side. He has suffered a great deal from indigestion and flatulence. Exercise has always increased the pain, and driving in a spring cart to the railway station this morning gave rise to excruciating pain in the right loin. The patient is a strongly built, well-nourished man, with a rather sallow complexion, complaining of periodical attacks of pain in the right loin radiating along the ileo-inguinal and ileo-hypogastric nerves to the right groin and testicle, and numbness over the great trochanter, where the skin is supplied by the last dorsal nerve. During the attacks of pain he often vomits; he passes urine once by night and two or three times by day. The abdomen is large and thick-walled. There is tenderness on pressing over the front of the right kidney, and also in the flank. This is especially marked when the kidney is compressed between the two hands. Owing to the adiposity of the patient and muscular resistance the kidney cannot be mapped out. There is no enlargement of either testicle.

July 16th.—Urine acid; contains one-sixth albumen, and

gives a slight deposit, which, under the microscope, is found to consist of a very few blood cells, more pus cells, a good many minute oxalate of lime crystals, and one or two granular casts. Twenty grains of bicarbonate of potash were given every four hours.

18th.—Patient has been very tender in the right loin since manipulation two days ago. He thinks the stone in his kidney is about the size of a blackbird's egg. Methylene followed by A. C. E. mixture was given. An incision was made in the right ileo-costal space parallel to and about half an inch below the last rib. The kidney was very deep, and lay high up, nearly hidden under the ribs. The lower half was exposed, and then it was manipulated between the finger and thumb, and nothing felt. It was then punctured with a large harelip pin, and at the first puncture a stone was felt in the pelvis of the kidney. The cortical tissue over it was incised, and the opening enlarged with forceps and finger. The stone was removed with a lithotomy scoop and finger. It proved to be an oval slightly flattened oxalate of lime calculus weighing 275 grains. The surface was covered with sharp pyramidal crystalline spikes. The colour was brown, sparkling in the light; the size that of a walnut or small dove's egg. It measured 1⅜ in. by 1½ in. by ¾ in. After the stone was removed the kidney bled freely. Sponges were stuffed into the wound, and sutures inserted, but not tied.

19th.—Twenty-five ounces of urine have been passed since the operation. It contains a great deal of blood. Urine escapes from the loin. Sponges removed and stitches tied. Drainage-tubes inserted.

20th.—Thirty-seven ounces of urine passed in twenty-four hours.

25th.—Stitches removed. Firm union, except where the drainage-tube is inserted.

29th.—One small tube remains in the wound.

31st.—Urine contains blood cells and triple phosphate crystals under the microscope.

Aug. 10th.—No urine escapes from the loin.

Sept. 6th.—Got up to-day.

13th.—Passes urine four times in twenty-four hours.

Oct. 5th.—Wound healed. A very few pus cells are visible under the microscope.

14th.—Discharged.

Medical Societies.

ROYAL MEDICAL & CHIRURGICAL SOCIETY.

Clinical Observations upon Respiration during Anæsthesia.

AN ordinary meeting of this Society was held on Dec. 9th, the President, Mr. Timothy Holmes, in the chair.

Dr. F. HEWITT communicated a paper on Clinical Observations upon Respiration during Anæsthesia, with special reference to the causes of embarrassed and obstructed breathing. He desired to direct attention to, and to set on foot a discussion concerning, the chief modifications in respiration which might be clinically observed during general anæsthesia. The importance of carefully watching the respiration had been frequently and rightly emphasised, and it was hence necessary that the various conditions capable of prejudicially affecting breathing whilst anæsthetic sleep was being induced or maintained should be understood. The respiration at any particular moment during anæsthesia for a surgical operation would be found to be influenced by one or more of the following considerations:—1. The anæsthetic employed. 2. The method of its administration, the most important factors in this connexion being (*a*) the rate of administration, and (*b*) the degree of air limitation practised. 3. The depth of anæsthesia. 4. The nature of the operation. 5. The presence of any pre-existing or accidental impediment within the air passages to the free entry and exit of air. 6. The presence of any other condition capable of hindering free lung expansion. 7. The activity of the nervous mechanism of respiration. Section 1 of the paper dealt with the chief morbid conditions capable of affecting respiration during anæsthesia; special reference being made to cases in which pressure upon the trachea was present, and to others in which the respiratory functions had become impaired by reason of recently acquired disease. In such patients the induction of even moderate anæsthesia was attended by considerable risk. In Section 2 the chief accidental obstructions and impediments to respiration during anæsthesia were considered. After dealing with the more commonly recognised causes of temporarily suspended respiration, it was pointed out that reflex obstruction to breathing might arise in connexion with moderately deep anæsthesia, more especially during operations upon sensitive parts. Attention was also directed to the fact that the tongue and parts constituting the boundaries of the upper air passages might, by vascular engorgement, become swollen and thus obstruct respiration. The more plethoric, bloated, and flabby the patient, the greater would be the tendency to the latter form of embarrassment. In Section 3 certain clinical phenomena which seemed to depend upon diminished blood oxygenation were described, and the nature of the "stertor" of nitrous oxide considered. (*a*) When the heart's action was good, air limitation or deprivation under ether might be allowed or might exist for a considerable time without evil result, whereas any reflex or other obstruction to breathing under chloroform was liable to be rapidly followed by cardiac depression. (*b*) When the heart's action was feeble, air limitation or deprivation was prone to induce syncope, whatever anæsthetic were employed. In support of some of the views advanced, reference was made to numerous administrations, conducted by the writer, of nitrous oxide with varying percentages of oxygen and of nitrogen practically free from all oxygen. The latter administrations were undertaken for Dr. George Johnson. Section 4 treated of non-obstructive respiratory failure, and reference was made to the deleterious effects which might follow the use of morphine in combination with general anæsthetics. Practical conclusions: 1. Any marked deprivation of oxygen (as by the incautious use of bag-inhalers) should be avoided (*a*) in patients with a very feeble circulation; (*b*) in persons who were the subjects of extreme obesity; and (*c*) in those whose respiratory apparatus had become seriously crippled by disease. 2. Temporarily suspended respiration was far less likely to be attended by symptoms of cardiac depression under ether than under chloroform. The latter anæsthetic should therefore be more particularly avoided in those patients in whom excitement or reflex respiratory embarrassment was likely to be well marked—i.e., in those who were likely to require considerable quantities of the anæsthetic. 3. The initial difficulties in respiration which sometimes attended the use of either in stout, plethoric, and muscular subjects might usually be prevented by first slowly administering a small quantity of the A. C. E. mixture with plenty of air, ether from an Ormsby's inhaler being substituted at the end of a few minutes. 4. In administering an anæsthetic the slightest impediment to respiration should be corrected as soon as possible in order to prevent an apnœa of a more abiding character from becoming established.

Mr. HAWARD agreed that it was necessary to be cautious in applying the results obtained by experiments on the lower animals to human beings. The essential differences already demonstrated between the two classes in regard to the administration of anæsthetics accentuated the value of direct clinical observation. The danger of pressure by aneurysm or other tumour arose less from diminution in the calibre of the air passages than from the fact that repeated attacks of dyspnœa had gradually lessened the irritability of the respiratory centre. In some persons the vessels at the back of the tongue were liable to become abnormally filled during anæsthesia; and another important cause of embarrassed respiration was an over-distended abdomen, such as was met with in the subjects of intestinal obstruction. If a profuse secretion of mucus were provoked, the head should be turned on one side so as to allow the fluid to run out of the corner of the mouth. The author had advanced a powerful argument in favour of ether as compared with chloroform—namely, that, when the heart's action was good, air deprivation or limitation under ether might be allowed or might exist for a considerable time without any evil result, whereas any obstruction to breathing under chloroform was liable to be followed by rapid cardiac depression. He was convinced from experience that profound anæsthesia did not abolish the fact of shock, and hence he thought that it was preferable to have recourse to some stimulating anæsthetic such as ether.

Dr. LAUDER BRUNTON, while agreeing that caution should be used in applying the results of experiments on animals to human beings, declined to admit that there was as much difference as the author had stated between the effects produced. He insisted that every time an anæsthetic was being administered to a human being an experiment was being tried, but they were unable to test the hypotheses

they had formed on human beings, and it was there that the value of experiments on animals came in. The danger of drawing hasty conclusions from experiments on animals was shown by the published reports of the British Medical Association on the action of chloroform. As the result of imperfectly interpreted clinical observations, it came to be believed that chloroform acted directly on the heart, and the result was that a consequent inattention to respiration brought about a higher chloroform mortality. The Hyderabad Chloroform Commission had tried to settle this question, but they had failed to produce a direct action upon the heart with chloroform so long as there was free access of air to the lungs; it only happened when a condition of asphyxia was induced. The reason given by the author for deaths during operations upon the anus for piles commended itself to him as being more probable than that usually given—namely, that it was due to a reflex affecting the heart. They had failed to produce the effect upon animals in a reflex manner. The importance of finding out how to safely give chloroform lay in the fact that the latter was practically the only anæsthetic available in the tropics. It was dangerous also to use ether in the neighbourhood of the actual cautery, and he did not think it would ever come into use for gynæcology. He alluded, in conclusion, to a little apparatus for demonstrating the entrance of air into the lungs, which consisted in a feather placed over the opening in the inhaler, the movement of which indicated the passage of air.

Dr. SILK thought that the term "anæsthetic apnœa" should be reserved for cases in which the symptoms were due to the intrinsic action of the drug, and the words "embarrassed breathing" should be used with the same restriction, excluding cases in which it was due to merely mechanical causes. The pulling forward of the tongue was useful, though it might only act reflexly. The highest aim of the anæsthetist should be to produce complete insensibility with as little deprivation of oxygen as possible. He was favourably impressed with the value of the prior injection of morphine, especially in cerebral operations. . . . He could not agree that the observation of the heart should be neglected, and he stated in conclusion that he preferred pure anæsthetics, and avoided mixtures.

Sir JOSEPH FAYRER had seen chloroform administered for every conceivable operation many thousands of times, but could only recall two cases which had terminated fatally; one was an operation on the ischio-rectal fossa, and the other an amputation for severe crush. . . . Ether was most unpleasant to take, caused much sickness afterwards, and, except in the winter, it would be impossible to use it in India.

Dr. SHEPPARD dwelt on the importance of not confining these clinical observations to one class of subjects or to one nationality. He objected to the A. C. E. mixture on the ground that it caused a profuse secretion of mucus, and he thought that the means suggested for distinguishing apparent from real passage of air into the lungs were fallacious. He observed that the lateral position was a difficult or even dangerous one in which to administer chloroform, and pressure on the hypogastrium should be avoided.

Dr. HEWITT, in reply, said that he believed it would be good practice in cases of embarrassed breathing to perform tracheotomy before it culminated in anything more serious. He had observed on one or two occasions that the first sign of impeded respiration was a crowing inspiration during the manipulation of a sensitive part. The pulling forward of the tongue, though it might act reflexly, did not move the epiglottis. In a patient with feeble chest walls the less strain that was thrown on the respiration the better. Antecedent administration of morphine he had seen give rise to serious symptoms, and he therefore preferred that it should be exhibited after the patient had fully recovered from the anæsthetic. The respiratory difficulties with ether would be avoided if chloroform, A. C. E., or nitrous oxide were administered beforehand.

PATHOLOGICAL SOCIETY OF LONDON.

Characteristic Organism of Cancer.—Non-contagiousness of Cancer.

AN ordinary meeting of this Society was held on Dec. 2nd, the President, Dr. W. H. Dickinson, in the chair.

Dr. W. RUSSELL communicated a paper on the Characteristic Organism of Cancer, an abstract of which is given on another page.—Mr. WILLIAMS said that we knew but little of the way in which germs reacted on our own organisms, and he failed to see how the fungi could produce a secondary growth in the liver of precisely similar character to a primary one in the rectum.—Mr. SHATTOCK referred to the communications by himself and Mr. Ballance on the subject of the origin of cancer, which went to show that this disease, though not due to a microbe, might result from the activity of one of the protozoa. They had observed and described fully the appearance of chromatin in the cancer cell, that the chromatin had been forced from the nucleus and protoplasm, and lay free in the interspaces. These granules were thought to have arisen from the nucleus, and they named them "carcinozoa." Gussenbauer had regarded these granules as the infecting agents, but we were still far from knowing that these were the causes of cancer. He had inoculated the ears of rabbits with psorosperms, and a hard lump had formed in the ear, which he had not yet had time to investigate. It was conceivable that these organisms might enter the cells, conjugate with them, and thus cause abnormal growth, constituting the essence of the cancerous process.—Dr. RUSSELL, in reply, did not expect that his statements would be accepted without verification, though he himself had failed to find out where he was wrong. There was no doubt that the whole question of the method of the growth of cancer required to be rewritten. He was perfectly familiar with the work of Messrs. Shattock and Ballance, but the granules they had described disappeared when the organism entered the cell. It was not a protozoon, but a fungus, and he hoped that someone would be able to cultivate it.

Dr. W. K. SIBLEY read a paper on the Non-contagiousness of Cancer. After first defining what he understood by infection and contagion, mentioning that an element—namely, "germs"—was common to both, he proceeded to describe cases of supposed contagiousness of cancer. When two surfaces were in contact, a primary cancer of the one was sometimes followed by a secondary cancer of the other, such as in the lips, vocal cords, the labia of the female genital organs, the opposite surfaces of the urinary bladder &c. He then stated that it was well known the seat of a primary cancer was often determined by chronic irritation, as on lips, scrotum, intestine, gall-bladder, and urinary bladder. The occurrence of a secondary growth opposite a primary one must be due either to direct contagion or to constant irritation. But as the seat of a primary growth was no doubt determined by local irritation, still more might it be expected that the seat of a secondary deposit should be determined by the same cause. He next described the case of a man with an epitheliomatous ulcer around the base of a carious tooth, and who had a small ulcer of the same nature on the inside of the cheek. This second ulcer did not come in contact with the primary one, but rested against the crown of the same tooth. It appeared that the seat of the primary ulcer was determined by the tooth, and of the secondary one by the tooth also; if the two ulcers had been in contact themselves it might have appeared to be a case of inoculation. He then referred to the inoculation experiments of cancer into lower animals, the results of which were very doubtful, and noticed especially those of Messrs. Ballance and Shattock. Concerning the well-known case of Langenbeck, who is said to have produced cancer in a dog from inoculation of juice from a case of cancer in a man, he quoted Virchow, who says: "I have myself examined the microscopical specimens of the case of lung tumour. They have more the appearances of that form of spontaneous cancer I have myself found in dogs than that of the cancer elements as found in man." After briefly referring to the so-called "cancer bacillus" of Scheuerlen, he concluded by saying that, in his opinion, secondary growths sometimes occurred started by primary ones, not through any contagious properties of the latter, but merely from the mechanical irritation these caused, and then quoted Mr. Jonathan Hutchinson to the effect that cancer itself was not due to any special material introduced into the body from without, but was simply a modification of what occurred in chronic inflammation.—The PRESIDENT referred to the case of a woman who had a cystic tumour of the ovary with a thin wall. It was of colloid nature, and burst into the peritoneum. After death coils of intestine were found infected with a parasitic attachment of cancer growth of the form, shape, and character of mulberries; some of them were easily detached

with the slightest touch, and the case appeared to him to be one of transplantation. — Mr. HUTCHINSON, jun., mentioned the case of a middle-aged man who had an epithelioma of the lower lip and one also on the back of the hand. Such cases of double primary growths were excessively rare. In the London Hospital there was recently a young patient who presented ten or twelve separate growths of adenoid cancer at various distances down the gut.—After some remarks by Mr. WILLIAMS, Mr. SHATTOCK showed the photograph of a rat which had been inoculated by Hanau with cancer, and died with masses scattered over the peritoneum. The cancerous material was obtained from another animal of the same species. Cancer in some appeared to be a local disease; in others, a constitutional one.—Mr. SPENCER stated that in Hanau's paper it was mentioned that some of the rats were found to be infected with cancer, which had not been inoculated, perhaps, because of the confined way in which they were kept.

The following card specimens were shown:—

Prof. CROOKSHANK: Leprosy Bacillus.

Dr. WASHBOURNE: Streptococcus of Erysipelas.

Dr. W. E. WYNTER: Primary Carcinoma of Fallopian Tube.

Dr. LYCETT BURD: (1) Primary Carcinoma of Lung; (2) Bony Plate between Pleura and Diaphragm.

Dr. PERRY: Dog's Heart with Filariæ.

Dr. MASON: Hypertrophic Cirrhosis in a Rabbit.

Mr. W. G. SPENCER: (1) Eyes of a Cat with Purulent Conjunctivitis; (2) Double Pyosalpinx with Purulent Vaginitis from a Dog; (3) Bony Plates in Dura Mater pressing on Spinal Cord and causing Paraplegia; (4) Distension of Uterus and Cornua by Menstrual Fluid from an aged Dog.

MEDICAL SOCIETY OF LONDON.

Congenital Contraction of Fingers.—Non-malignant Vesico-intestinal Fistula.

AN ordinary meeting of this Society was held on Dec. 8th, the President, Mr. Knowsley Thornton, in the chair.

Mr. WILLIAM ADAMS contributed a paper on Congenital Contraction of the Fingers, and its association with "hammer-toe." The author reviewed its clinical history in three distinct stages. In the first stage, observed in children from one to two years of age, the little finger only was involved, and this was more or less bent, with an inclination towards the median line of the hand; the second and third phalanges were flexed upon the first, which was never flexed, and in the later stages became hyper-extended. The bent little finger could easily be straightened, and there was no evidence of any contracting force, either by tendon, fascia, or skin; the second and third phalanges simply dropped down, evidently from some failure in the muscular power of extension. This presented a remarkably close resemblance to what took place in the first stage of "hammer-toe," with which this affection was allied. The second stage was essentially one of confirmed contraction of the little finger, which took place gradually, if the malposition in the first stage had not been corrected; sometimes a contracted fascial band running longitudinally, and adherent to the skin, became prominent. The finger could not be straightened by any moderate amount of force, and the skin on the palmar aspect appeared to be thin, short, and contracted. The late Mr. Tamplin believed a congenital deficiency of the skin was the cause of the contraction. Spontaneous arrest took place in this stage, in a large proportion of cases with some deformity and impairment of function. In the third stage, when spontaneous arrest did not take place in the second stage, increase of the contraction occurred at a late period, in a certain proportion of cases, from sixteen to twenty years of age; all the fingers became involved, and there was evidence of fascial contraction of a peculiar kind, differing widely from that in Dupuytren's. There was some appearance of a central flat band of fascia, about three-eighths of an inch in width, running lengthwise along the first and second phalanges. The terminal fibres of the fascia inserted into the skin were involved in this band, and contributed to the appearance of skin contraction. In the little finger in many cases there was an appearance of a contracted lateral band of fascia, generally on the outer side. The first phalanx was always drawn backwards or hyper-extended. This period of increase seemed to occur more frequently in young ladies of a neurotic temperament. The etiology of this congenital finger contraction was very obscure. It used to be thought to depend upon a congenital deficiency of the skin, but the appearance of skin contraction, the author believed, to be a secondary affection. The failure of the power of extension in the first stage, when the second and third phalanges simply dropped, might possibly be due to some failure or imperfect development of the lumbricales and interossei muscles. The hereditary character of this form of finger contraction was well known, and as it was of common occurrence and spontaneous arrest took place in the majority of cases, it was only regarded as the crooked little family finger; but should contraction advance and the other fingers become involved—i.e., reach the third stage,—it assumed a more serious character, and medical advice was sought. The treatment in the first stage was essentially preventive, the object being to prevent the dropped finger (always the little finger) falling into a stage of confirmed contraction. A light retentive metal splint, or a piece of whalebone worn inside the finger of a glove, at first day and night, and afterwards at night only, for two or three years would be sufficient. In the second stage—viz., that of confirmed contraction of the little finger, seldom reached under ten years of age,—the object was to overcome the contraction and straighten the finger with full muscular power. It was formerly thought this might be done by mechanical means alone, but in 1885 Mr. Adams adopted the plan of dividing the longitudinal bands of fascia, as well as the terminal branches passing towards the skin, before commencing the extension, which must be continued night and day for a period of from three to six months by an instrument with rack-and-pinion movements corresponding to the phalangeal articulations. It might be then gradually discontinued and a simple form of a metal retentive instrument applied for night use. In the third stage, in which all the fingers were sometimes involved, the operative and mechanical treatment were essentially the same as that described in the second stage. The after-treatment was also the same, but the extension instrument should be worn day and night for the full period of six months. Casts and photographs of several cases which had been successfully treated in the third stage were exhibited to the Society.—Mr. JOHN HOLM said that these deformities caused great inconvenience.—Mr. SPENCER WATSON suggested that the deformity was due to the gradual loss of the use of the hand as a prehensile organ.—Mr. ADAMS, in reply, said that he believed in the neurotic origin of many of the cases, but he was ignorant of the extent to which development contributed to the deformity.

Mr. REGINALD HARRISON then offered some remarks on cases in which a Non-malignant Communication existed between the Bladder and the Intestines. The first case occurred in a man, aged fifty-eight, who ten years before had been laid up by pain in the lumbar region and discharged pus by the urine. Later he noticed a spluttering of air from the penis at the close of micturition. He discharged clear fluid, apparently urinous, from the rectum at intervals between defecation. It was also noted that the elements of food were present in the urine, and the bladder symptoms were increased with diarrhœa. The second case occurred in a man aged fifty. Two years before he had had abdominal symptoms in the region of the bladder, with much pain. Air was passed at the close of micturition, and the urine was mixed with feculent matter. In the third case, in a man aged sixty-one, there were symptoms of irritable bladder, with hæmaturia, pain, frequency of micturition, and air bubbles were frequently passed. He died with symptoms of renal disease. The fourth patient was a man aged sixty, with pain in the right sciatic region, retention of urine from enlarged prostate, and stricture. The pain suddenly ceased, and with that there appeared pus in the urine of offensive qualities. He stated that when aged twenty he had had an abdominal abscess, and a communication had taken place between the bladder and the intestine. At the necropsy a hole near the top of the bladder communicated indirectly with the descending colon. In the fifth case, in a man aged fifty, there had been symptoms of loose bowels for six weeks and for three weeks irritability of the bladder, pain in the abdomen, and purulent urine. Micturition terminated with a fizzing noise not unlike the expiring efforts of a soda-water bottle. Later he passed the portion of a rabbit's fractured thigh-bone per urethram. In 1869 he saw a boy aged nineteen in the Liverpool Royal Infirmary who passed air and fæces from the bladder. Left lumbar colotomy was followed by

an excellent recovery, and for three years he remained well. At the necropsy there was found total atrophy of that part of the gut between the artificial anus and the recto-vesical fistula, so that only a fibro-areolar cord remained. The cases could be divided into two classes: those which gave rise to a slight inconvenience, and who lived for years in good health, passing flatus from the penis; these simply required measures to be taken for the prevention of diarrhœa. In the second class of case, where the trouble was progressive or the kidneys were in danger from urinary decomposition, the flow of fæces should be deviated. He thought that laparotomy was not at all adapted to cases of this kind, and probably the safest practice was a right colotomy. In some instances supra-pubic opening might lead to good, and in others information might be gained by electric cystoscopy. He had met with only one case of so-called pneumaturia, and that was of very doubtful origin.—The PRESIDENT had had no personal experience of such cases. From what he had read, he thought that they were not at all suitable for laparotomy. He knew of a case following abscess in which colotomy had resulted in cure as far as the bladder symptoms went.—Mr. CRIPPS referred to his monograph, wherein he had collected sixty-three cases. Only eight were malignant, the remainder being inflammatory; many from abscess between the intestine and bladder, and others secondary to ulceration and stricture. In twenty-five cases the communication was between the upper rectum and the bladder; of the remainder two-thirds were with the large gut and one-third with the small. If the communication were very low down, digital examination might detect it, but if high up, one was dependent upon the symptoms. In cases of communication with the small gut, the fæces found in the urine were to a large extent undigested, and were always present. In the large gut cases the material presented well-marked fæcal characters, and was not always present, but it was usually increased by diarrhœa, and if milk were injected into the rectum, it usually speedily reappeared in the urine.—Mr. BALLANCE had reported one case of vesico-intestinal fistula in which he had performed right lumbar colotomy with relief.—Mr. HARRISON, in reply, stated that the renal trouble in his cases supervened when active putrefaction was taking place in the bladder; it was a condition of surgical kidney.

Notices of Books.

A Text-book of Obstetrics. By Dr. F. WINCKEL. Translated under the supervision of J. CLIFTON EDGAR, M.D. Edinburgh and London: Young J. Pentland.—This book is the work of one of the most learned and thoughtful of German obstetricians, and as such must command great attention and respect. The author has been the director of three lying-in hospitals during the last twenty-six years, and has carefully observed, tabulated, and digested the experience thus gained. The great value of the work consists in the results of direct observation. The watchword is, "I have seen," rather than "it is said." The chapters are somewhat unequal, those, in our opinion, being the best which deal with the rarer and more obscure affections. The author prefaces his book by a short summary of obstetric history, given rather from a humorous than a serious point of view, and this is followed by a list of works on midwifery in various countries at different epochs. The ancient lists are interesting. Those dealing with current literature do not seem to us so satisfactory. They are not exhaustive, and contain, on the other hand, a large number of little cram-books for students, which should not appear on any list except an *index expurgatorius*. The work itself begins with pregnancy, and anatomy is altogether omitted. The author, like nearly all foreigners, is not always accurate in his statements as to English opinions and practice. If foreigners would only take the trouble to keep their eyes on the English *Archiv für Gynäkologie* (the Obstetrical Transactions), they would be better informed than they are. We venture to think that no Englishman would undertake to summarise German opinion without taking notice of the German Obstetrical Transactions (the *Archiv für Gynäkologie*). As a text-book for English students we do not expect its sale will be large. As a book of reference for teachers it is very valuable. The translation is well done.

Revue d'Orthopédie. Paris: G. Masson, Boulevard Saint Germain.—Drs. Kirmisson and Petit of Paris, with the help of MM. Verneuil, Dubrueil, Ollier, and Poncet, have started a bi-monthly journal, which is entirely devoted to a consideration of orthopædic surgery, and the sixth number, completing the first volume, was published last month. The journal is actively supported by English, American, Belgian, Swedish, and Austrian surgeons, and contributions are welcomed from all sources. The first volume contains papers dealing with many questions of interest to all practitioners. England is represented by Mr. Golding Bird, who contributes an analysis of his cases of disease of the spine treated by Sayre's plaster-of-Paris jacket. As in so many similar journals, the reader is often annoyed by finding papers published in two or more numbers, which greatly increases the labour of reference.

Swanage: its History, Resources as an Invigorating Health-resort, Botany, and Geology. Edited by JOHN BRAYE. Pp. 119. London: Everett and Son. 1890.—The object of this book seems to be to bring Swanage into notice as an eligible health resort for cases of pulmonary disease. A somewhat detailed historical account is given of it and the surrounding country. The section relative to the influence of its climate on disease has been written by Dr. Forbes Winslow, who considers it of all places "to be the very one for chest complications of various descriptions." He claims for it, as important climatic elements from a health point of view, that it has a small rainfall, an absence of fogs, pure air, and an equable temperature, and on most of of these points he has given tables of comparison for the years 1881–3 with Ventnor, Torquay, and Bournemouth. He also states that "the wind is rarely in the east at Swanage," but has given no numerical evidence in support of this assertion. The drainage has been much improved of late years; but we infer there is still room for improvement, as we are informed that Professor Robinson has prepared plans for a thorough system "which will ere long be put into operation." No hint is given as to the disposal of the sewage, which, if run into the sea, may after a time become a grave nuisance, especially so far as sea-bathing is concerned. The details given in this volume show Swanage to be in many respects a desirable health resort; but we are certainly not prepared to say that it is more so than some of the other places with which it is in this book brought into comparison. Mr. Woodward has contributed a chapter on the Geology of Swanage, and under the head of Botany Mr. Mansell Pleydell has furnished a list of plants found within a radius of six miles from Swanage.

Teneriffe, Personal Experiences of the Island as a Health Resort. By G. W. STRETTELL. Pp. 104. London: Unwin. 1890.—The object of the author of this work, based upon a twenty months' residence in the island, has been to give a fair and trustworthy account of the climate of Teneriffe as a health resort, avoiding alike the extravagant praises of it as a means of cure for all diseases and the depreciation of it resulting from the experience of those who have been misled by such descriptions. The most striking feature in Teneriffe is the variety of its climates, and upon the selection of the place of residence, and on the change from one place to another when requisite much of the benefit to be derived in the early stages of lung disease depends. Though the island is remarkable for its dryness and equability of temperature, yet the north-east trade winds "are felt with sufficient severity in Orotava, and its neigh-

bourhood to render them during the winter months bleak and distasteful, if not injurious, to anyone in a delicate state of health." Mr. Strettell has given a very readable description of the principal health resorts of the island, with much useful information as to the accommodation, the mode of living, the occupations and the amusements available for visitors in health, and for invalids in search of it. His cautions to the latter on the subjects of clothing, diet, exercise, and recreation, and on the imperative necessity for a strict observance of the rules laid down by their medical advisers, deserve careful study by all who intend to winter in the island for the benefit of their health. The want of an index is a serious defect in the book.

Madeira and the Canary Islands, a practical and complete Guide for the use of Invalids and Tourists; with nine maps. By A. SAMLER BROWN. Second edition. Pp. 130. London: Sampson Low and Co. 1890.—This is a second edition of Mr. Brown's useful guide to Madeira and the Canary Islands. He has added materially to the information respecting Madeira, and has brought it down to date respecting all the islands. We regret that he has not taken advantage of the opportunity to add an index.

The Veterinarian.—In the December number of this serial a short leader is devoted to the consideration of Koch's method of treatment of tuberculosis, a method which to veterinarians and to those interested in the diagnosis of tuberculosis in cattle will be almost invaluable; for one of the great stumbling blocks in the way of legislation in connexion with tuberculosis has been the difficulty of obtaining reliable diagnosis of the disease in suspected cases. By the introduction of the diagnostic method of Koch a most serious difficulty has been removed. Dr. Andrew's "Harveian Oration" is concluded; an "Adjustable Splint" is described; a number of statistics regarding the method of dealing with the "Import Trade in Live Stock and Dead Meat;" the "Inspection of Cattle and Sheep for Export from the United States"; and notes and speeches on the "Technical Education," and "Registration of Farriers" are given. The remainder of its pages are devoted to the reports of societies. The most interesting amongst the papers given is that by Mr. J. H. Penhale of the Western Counties Veterinary Medical Association, entitled "Some Forms of Administering Anæsthetics to the Lower Animals." Mr. Penhale advocates the use of chloroform, almost pure, in preference to any other "total" anæsthetic.

On the Pathology and Treatment of Diphtheria By EMANUEL MAY, M.D. Heidelberg. London: J. & A. Churchill. 1890.—The author of this pamphlet thinks (erroneously, we believe) that the profession in general do not recognise the importance of treating diphtheria by germicidal agents. Having only lost two cases during thirty-five years' practice, he thinks himself entitled to regard his method as specific. It consists in the early application of nitrate of silver (one drachm to the ounce), and continuing it so long as any deposit can be seen; calomel and saline diaphoretics follow, and the patient is sustained by a light, nutritious diet; during convalescence, tonics—as bark or iron—and a fuller diet. In view, however, of the admittedly great germicidal properties of perchloride of mercury, he now uses this drug both locally and internally, and in the former respect at least he cannot claim to be singular.

SOME CHRISTMAS BOOKS.

WE have before us several volumes issued by Messrs. BLACKIE and SON (London, Glasgow, Edinburgh, and Dublin), got up in the elegant style for which that firm is distinguished, and which are eminently suitable for presents to young people at this festive season. We can here do but little more than give their titles and the names of their authors. *A Rough Shaking*, by George Macdonald, LL.D. (with 12 page illustrations by W. Parkinson), is a life-history full of incident, described in a simple yet attractive fashion, and intended, it would seem, to encourage a feeling of respect and sympathy for the lower creation.—*By Right of Conquest; or, with Cortez in Mexico*, by G. A. Henty (with 10 page illustrations by W. S. Stacey, and two maps), and *A Chapter of Adventures; or, Through the Bombardment of Alexandria*, by the same author, are just the books for boys. In the first mentioned the prominent feats and features connected with the Spanish Conquest are worked into the career of the adventurous hero of the story, and are depicted by a master hand.—*Hussein the Hostage; or, a Boy's Adventures in Persia*, by G. Norway (with 8 illustrations by John Schönberg), is another book of the same class, and abounds in situations of absorbing interest to the juvenile mind.—*The Secret of the Old House*, by Evelyn Everett-Green, and *A Rash Promise; or, Meg's Secret*, by Cecilia Selby Lowndes (illustrated), are works of a simpler class, and are intended for the delectation of more youthful minds. It is hardly needful to say that the tone of the whole of the above is unexceptionable, whilst their educational value is not small. The illustrations, too, are altogether excellent.

New Inventions.

CROSSE'S SAFETY ENEMA PAN.

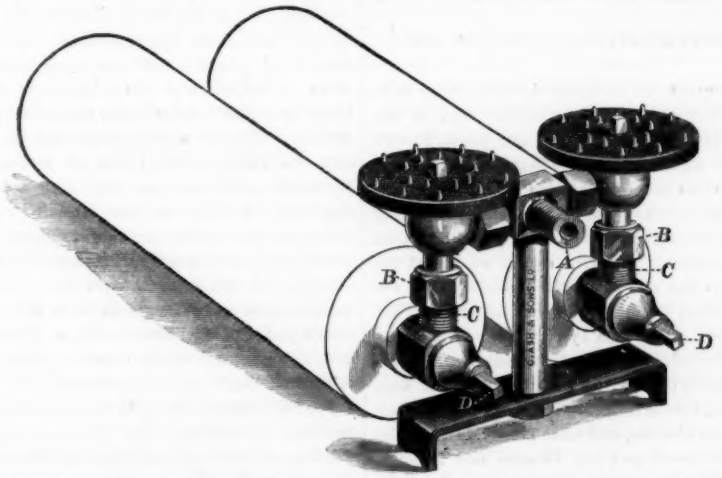
THIS device is intended to obviate some of the disadvantages attendent upon the use of the ordinary enema vessel, and which have often resulted in serious inconvenience in the sick room. As the accompanying illustration will show, the pan is provided with a nozzle into which the tube is fixed, whilst the tube itself is furnished with a stopcock to regulate the flow of the liquid employed as an enema, and to prevent regurgitation. The pan is light, portable, and easily cleaned, and is constructed in such a form that it cannot be easily overturned. The apparatus is calculated to be of great service to bedridden invalids. Mr. W. Toogood, Burlington-buildings, Heddon-street, Regent-street, London, is the wholesale agent.

IMPROVED PEDAL ATTACHMENT FOR THE ADMINISTRATION OF NITROUS OXIDE GAS.

I WISH to bring before the notice of the profession, more especially the dental section of it, a simple and effectual contrivance I have designed to assure the anæsthetist against the possibility of suddenly running short of gas. Having used it now in a great number of gas administrations with perfect success, I am able to affirm that any anxiety concerning a chance failure of supply is entirely alleviated. Hitherto, when the anæsthetist has exhausted the supply of gas from one bottle during its administration, it has been necessary to bend down, turn off the empty bottle, and turn on the supply from the duplicate full bottle. If this proceeding be obviated by the initial turning on of both bottles, the liability to run short still remains, as there is always a doubt as to the quantity left in each bottle unless carefully weighed, which is a cumbrous proceeding. It is true that an approximate estimate may be formed by keeping a record of the amount used at each administration, and that

by tinkling the bottle an idea may possibly be formed of its contents. But these methods are open to an element of doubt. Again, if, at the time of administration, instead of turning off the empty bottle, this be omitted (as it all takes time), and the full bottle be turned on, there is a rush of gas from this one into the empty bottle as well as into the bag, and there is gas again in both bottles, with the uncertainty of the amount.

In the Improved Pedal Attachment both bottles are turned on at the commencement of the operation, the escape of gas from each being under the control of the pedal screw valve attached to each bottle. In this case, should the supply from one bottle run short, its cavity is closed in the ordinary way by the foot-piece before turning on the supply from the other bottle (which should always be a full one) by transferring the foot from the one to the other pedal valve. After the operation the empty bottle is replaced by a full one. Another advantage connected with it is the absolute control maintained over the gas, which prevents that sudden rush into the bag which obtains with some pedal attachments at present in use.



PERCY EDGELOW,
Anæsthetist to the National Dental Hospital.
Old Burlington-street.

THE TREATMENT OF MALARIA.

To the Editors of THE LANCET.

SIRS,—Under the heading "The late Major Barttelot," some correspondence has recently taken place in a lay contemporary, pointing out the ill-effect of long-continued malaria upon the nervous system, with accompanying deterioration of the *morale*. I wrote a letter dated Nov. 19th with reference to the pernicious action of malaria, but it is obvious that in order to thoroughly thresh out the subject it should be discussed in a medical paper. I therefore venture to ask you to kindly open your columns for the purpose. There can be no doubt that the two great depressants of nervous energy in the tropics are heat and malaria. The malaise set up by the latter is manifested in complete exhaustion, which produces a pitiable state of nervous irritability. So marked is this, indeed, that the least exertion of body or mind is dreaded. For this malaise it was the almost invariable rule to give quinine, with the result, as it seemed to me, of frequently intensifying the mischief wrought by climate. Moreover, in a large number of cases quinine was taken in malarious districts as a prophylactic or preventive of malarial fever, and I observed that even if fever were kept in abeyance, a highly irritable condition of nervous system was established. This I attributed to quinine, because I did not notice a similar result from rusot, atees, kreat, or other bitters. Kreat (ophelia chirata) is believed in to an immense extent by the natives of India. They attribute almost miraculous properties to the plant ("tajib ki dawa," as they say), both as a tonic and a restorative, and use it infused pretty much as we use tea. This was the bitter I preferred for malarial fever and the malaise caused thereby, as well as for what is popularly known as "dumb ague," because I did not find it produce the headache or distressing irritability which so often followed the use of quinine. In a former letter I pointed out the danger of giving quinine in pregnancy. I note that Squire in his "Companion to the Pharmacopœia" describes chiretta as a purer bitter than gentian, and, prepared as it is in India for domestic use, I consider it far more efficacious than the preparations of the Pharmacopœia. Chiretta is a very valuable tonic and restorative from exhaustion, however induced; it acts on the liver and bowels, and I know nothing equal to it for indigestion and its attendant evils. I should be glad to read the opinion of others as to the treatment of malaria.

I am, Sirs, yours truly,

G. YEATES HUNTER,
Late Brigade Surgeon, Bombay Medical Service.
Philbeach-gardens, S.W., Nov. 23rd, 1890.

BRITISH MEDICAL TEMPERANCE ASSOCIATION.—A meeting of the British Medical Temperance Association was held on Friday, Nov. 28th, in the rooms of the Medical and Chirurgical Society, 20, Hanover-square, W. Dr. B. W. Richardson, F.R.S., presided, and a paper was read by Dr. C. R. Drysdale, entitled "A Reply to some Doubts as to the Superior Health and Longevity of Total Abstainers from Alcohol." He referred to the report of the Collective Investigation Committee of the British Medical Association on alcoholic habits and mortality, which is still being used extensively by opponents of total abstinence, in spite of the disclaimer of Dr. Owen and the explanations given by others. After quoting the statistics of Dr. Ogle, Mr. Neison, and others, which showed the very high mortality of persons engaged in the liquor traffic, he instanced the results of the Temperance and General Provident Institution, which showed that from 1866 to 1889, 6894 deaths and claims for £1,470,147 were expected in the General Section (non-abstainers), and that 6645 deaths occurred, or 96 per cent., and £1,428,671 were claimed; in the Temperance Section (total abstainers) 4542 deaths and claims for £983,307 were expected, and 3198, or 70 per cent., occurred, and £664,832 were claimed; showing an immense difference in favour of the total abstainers. The rates of other life insurance offices were quoted, and the mortality rates in the Foresters and Rechabites Societies, to show the superiority in regard to length of life of abstainers over non-abstainers.

THE LANCET.

LONDON: SATURDAY, DECEMBER 13, 1890.

NOW that accurate pathological investigations have shown the very large part that tubercle plays in the pathology of diseases of glands, bones, and joints, KOCH'S treatment assumes a great importance to surgeons. Indeed, if KOCH'S predictions are fulfilled, his liquid will be as largely used by surgeons as by physicians, and its influence in surgical therapeutics will be even more widespread than in medical therapeutics. For this reason we regard the investigations into the effects of the inoculations of the fluid which are being made by surgeons as of equal importance with those undertaken by physicians on patients suffering from tubercular disease of the lungs. And from an experimental point of view, we regard them as of even greater importance, for the influence of the drug upon tubercular tissues is more obvious, and more positively determinable when the diseased part can be seen and handled, than when it is concealed within the chest. In the main, surgical tuberculosis is attested by very obvious signs, and any marked or rapid change in the local condition is easy to be proved and recorded. We therefore hold that the value of the liquid will be first demonstrated in surgical cases, and physicians will be wise to follow as closely as they can the effects produced in external forms of tuberculosis. Two points seem already to have been clearly demonstrated: The peculiarly selective affinity of the liquid for tubercular tissues, and the nature of the action it produces in them. Although it is stated that certain non-tubercular skin affections have reacted to the fluid, yet no one who has watched the effects of an inoculation upon a patient with scattered lupus deposits, and has seen every one of these deposits acutely inflamed while all the rest of the skin has been unaffected, can doubt for a moment that the drug exerts a specific effect upon tubercular tissues. The nature of the immediate effect produced is equally obvious. It is an intense hyperæmia with acute œdema; but what follows upon this—whether the tubercular tissue necroses or disintegrates and is separated, or is absorbed, or "resolves" into normal tissue, is not at present known. Perhaps the local reaction may terminate in any or all of these ways. Our present experience has also shown that there are striking differences in the reaction of different tubercular diseases. The local reaction is most intense in lupus, either of the skin or of mucous membrane. And there is a striking difference in the systemic reaction in different classes of cases. In a case of lupus the temperature rises a little gradually, remains high or very high, perhaps for several hours, and then falls gradually, the curve being marked by distinct oscillations. The paroxysm of fever in this way may last several days or even a week. But, in the case of a tubercular bone or joint, the temperature more rapidly reaches its maximum, and then quickly and steadily falls again to the normal, so that the whole reaction may be over in twenty-four hours. The effects on pulmonary tubercle seem on the whole to be more closely allied to those observed in disease of bones and joints than to those observed in lupus. In connexion with these variations it is very interesting to bear in mind that lupus is, so to say, the least tubercular of all these diseases. For a long time its tubercular nature was denied by good authorities, and it is universally admitted that the number of tubercle bacilli in lupus is remarkably small when compared with the abundance of them in the lungs in phthisis or in many specimens of bone and joint disease. This is a very important fact, and it may help to explain the mode of action of the drug. Is there something in skin and mucous membrane especially inimical to the tubercle bacillus, or does such an inimical substance exist in larger quantity in skin and mucous membrane than in other tissues? Mr. WATSON CHEYNE has suggested that in tubercular tissues a substance exists which combines with KOCH'S fluid to produce a powerful local irritant. If so it would appear that such a substance is not in direct proportion to the number of tubercle bacilli in any given area.

For the correct answers to these and other speculations, however, we may well wait. More pressing is the question whether the local action of the drug is such as to supersede the need of the knife, or whether it must be followed by the removal of dead tubercular products by ordinary surgical means. It is reasonable to hope that, at any rate in the earlier stages of the disease, all resort to the knife will be rendered unnecessary, for we are familiar with the complete recovery of tubercular tissues without operation under the more ordinary methods of treatment. When the disease has advanced further and extensive caseous deposits have been formed, it is more probable that such will need to be removed with the knife or sharp spoon. It must not be thought that that would show the small value of the treatment. For the difficulty the surgeon now meets with in the operative treatment of tubercle is in the removal of every portion of actively diseased tissue, and in the tendency for the healthy tissues left behind to become infected anew by the tubercle bacilli. If KOCH'S remedy does no more than arrest recent and active tubercular disease, and enable the tissues to resist the morbific influence of the tubercle bacilli, it will not only limit the field for operative surgery, but render its use easier, safer, and far more often permanently successful. The severe local pain produced by the inoculations is a matter that must be taken into account. In the case of a tubercular bone or joint, not only does the inoculation of this liquid produce a paroxysm of high fever with all its attendant discomforts, but it causes severe pain in the part for many hours, and children with comparatively painless affections of a hip or knee will be crying out with pain for hours as the result of an inoculation. The constitutional disturbance produced is also severe, and in some cases exceedingly grave, and it would seem that these effects must be produced many times before even a simple and early tubercular process is arrested. The remedy is not a magician's wand, no fairy spell, but a powerful poison. And if it be not endowed with very special curative properties its use will prove too dangerous and too painful for it to become a routine remedy. For satisfactory evidence of cure we still

are waiting. That it causes acute local hyperæmia in tubercular tissues we know; but whether, and how, and how often, and how soon this hyperæmia is followed by arrest of the disease and restoration of impaired function in the part we know not. This is the one point on which we must now fix our attention, and we believe that it is from surgeons rather than from physicians that the answer to the question must come.

DR. W. RUSSELL'S observations on the Characteristic Organism of Cancer, demonstrated before the Pathological Society of London on Dec. 2nd, and published in our columns this week, open up some most interesting questions, questions that will have to be answered before we can assign the causal agency of cancer to either the psorosperm or the yeasts. As far as can be gathered from his paper, Dr. RUSSELL is undoubtedly of the opinion that the organism he describes is not a psorosperm, but is one of the yeasts or sprouting fungi. He thinks, indeed, that he has been able to demonstrate in his sections the actual budding that is so characteristic of the vegetative multiplication of the yeast cells. Whatever may be the outcome of this work, Dr. RUSSELL has placed on record an admirable method of staining, and so demonstrating certain protoplasmic bodies, which, although probably previously observed, have certainly been misunderstood; and it is quite possible that as a result of this improved method of staining some of these bodies, the structure of which we have hitherto not been able to make out accurately, and which, for want of a better name, have been spoken of as "psorosperms," will now have to be reclassified and spoken of as "yeasts."

Dr. RUSSELL does not claim to have proved any causal relationship between his fuchsin bodies and cancer, but after eliminating all fallacies, as far as he was able, he places his results before his fellow-pathologists in order that his observations may be confirmed or corrected. There can be little doubt that in a very large number of cases these organisms are present wherever there are large masses of epithelial tissue; and even in the short interval since Dr. RUSSELL'S paper was read, several observers, who have not yet, of course, had time to publish their results, have confirmed his statement that these organisms are present in such epithelial masses in cases of cancer. It will be well, in view of this, to bear in mind, as Dr. PAYNE first insisted in this country, that yeasts are very frequently found as parasites in very moist or in very scaly conditions of the skin and epithelium; and although he appears to think that yeasts "have little if any pathogenic effect," it is certainly possible that there is something more than a mere accidental association between the many kinds of epithelial proliferation and the presence of these yeasts, as the two are so frequently associated. So long as the yeast cells were found only in the proliferating epithelium, it was an easy enough matter for any pathologist to convince himself that their presence was merely accidental, or was nothing more than secondary to the changes that had taken place in the epithelial layers; but now that Dr. RUSSELL has shown that not only are these fuchsin bodies present in the proliferating epithelial cells near the free surface, or in the large epithelial projections, but that they are also to be met with in the lymphatic spaces, in which only a few epithelial cells are present, one is compelled to leave this neutral ground and to search for evidence either for or against these organisms being the cause of epithelial tumours. It must of course be borne in mind that yeasts are found even in collections of degenerating fatty matter in the sebaceous follicles; that they are also found on free epithelial surfaces, and in the hair-follicles; whilst in the milk ducts, under certain conditions, yeasts find both suitable nidus for their development and plenty of food for their nutrition, so that in this position, especially, they may develop most luxuriantly even in cases where no cancer is as yet present. These facts, therefore, help us a little in arriving at a conclusion. It is now a generally accepted theory, or something more than a theory, that the growth of organisms, such as bacteria and yeasts, may be very considerably modified by their food supply and by their surroundings, and that although a yeast in presence of sugar gives rise to alcoholic fermentation, it may still grow and multiply (not so freely of course) when it has to derive its food material from other sources, so that the absence of sugar from the skin does not make it impossible for these organisms to grow, although they must necessarily grow under conditions less favourable than those under which they are usually found. It is very probable that the parasitic character of the organism has been gradually acquired, from the fact that it has to exist under altered circumstances in the body, and that it is, with its new powers, able to live not only along with the epithelial cells, but to invade them, gradually becoming more and more parasitic in character, and giving rise to marked epithelial proliferation and invasion. Mr. SHATTOCK mentioned at the meeting of the Pathological Society that Mr. BALLANCE and he were carrying on inoculation experiments, and that they hoped ere long to obtain definite results. At any rate, it would be easier to prove by cultivations and inoculations that a yeast is, or is not, the cause of carcinoma, than if we had to deal with an animal organism such as the psorosperm is supposed to be, as this can scarcely be cultivated outside the body.

As HANSEN'S recent researches have demonstrated, we did not, until he took the matter in hand, thoroughly understand even the ordinary yeasts, as regards either their morphological or biological characteristics, and it can only be by a thorough examination, cultivation, and inoculation of the various parasitic yeasts, and by a comparison of these with the organisms that Dr. RUSSELL has found, that we shall be able to form any definite opinion as to the relation of these to cancer and various skin diseases.

Dr. RUSSELL'S carefully drawn up and lucid report should do very much to stimulate our researches along these lines. It may be that these parasitic yeasts are more closely allied to certain saprophytic yeasts than we at present imagine, though, as is more probable, if HANSEN'S results are to guide us at all, our difficulty will be to separate the several forms that have hitherto been looked upon as all belonging to the same species from one another, and so to obtain pure cultivations with which to work. Whether Dr. RUSSELL'S observations are confirmed or not—and this can only be decided by much careful observation and experimentation,—he has opened up a most interesting and fertile field of research; and even should

subsequent observations make it evident that these yeast cells are only accidentally present or as the result of changes in the skin, the ground will have been very much cleared for future workers. We hope, however, without expressing any opinion, that Dr. RUSSELL will be able to defend his thesis successfully.

THE trial of MARY ELEANOR WHEELER, *alias* "PEARCEY," which occupied three days, terminated at the Old Bailey on Wednesday, Dec. 3rd, in a verdict of "Guilty." The prisoner, who was about twenty-four years of age, was indicted for the wilful murder of a young married woman named PHŒBE HOGG and her infant child, PHŒBE HUNSLOPE HOGG. From the age of seventeen WHEELER seems to have led a disreputable life. For about three years she cohabited with an artisan named PEARCEY, whose name she adopted. On account of a supposed *liaison* with HOGG—then a single man, but subsequently the husband of the murdered woman—and also with another person, she and PEARCEY separated two years prior to the events which culminated in the conviction at the Central Criminal Court.

From the evidence it appears that HOGG married at the end of 1888 a person named STYLES, who was then *enciente* by him. After the murder a number of letters were found in WHEELER'S handwriting in her house at Priory-street, the place where the tragedy occurred. From these letters it is clear that she had conceived a passionate affection for HOGG, and although she knew he was about to marry, and did not appear to wish to restrain him from doing so, she showed that it was neither her wish nor intention to break off her intimacy with him. Until a short time after the marriage HOGG alleges that no immoral intercourse took place between him and WHEELER; but neither Mr. Justice DENMAN nor counsel for the prosecutor and the defence accepted his statement as altogether worthy of credit; nor could any reasonable person, assuming of course that the letters truthfully portrayed the relations in which HOGG and WHEELER stood to one another. Be this as it may, HOGG confessed that within two months of his marriage an illicit intimacy commenced, and that this was continued up to the date of the murder of his wife and child. Later on WHEELER was introduced to Mrs. HOGG, and, in fact, nursed her during an illness. From some reason or other not sufficiently explained at the trial, the two women ceased to exchange visits until within a short period of the murder. On Oct. 24th of this year there seems little doubt that the deceased, at the written invitation of the convict, went to her house in the afternoon between 3 and 4 o'clock, and took with her her infant child in a perambulator. After this hour neither mother nor child was seen alive. About 7 P.M. the same day the dead body of Mrs. HOGG was discovered in a somewhat lonely place more than a mile from WHEELER'S house. The head, which was nearly severed from the body, was covered with an old cardigan jacket, which the man PEARCEY—the quondam paramour of MARY ELEANOR WHEELER—swore he left at the latter's residence two years previously, when he ceased to cohabit with her. Later on a derelict perambulator, afterwards identified as belonging to Mrs. HOGG, was found at some considerable distance from the place where the corpse had been deposited. The perambulator contained a quantity of recently shed blood, and the apron and rug belonging to it were profusely stained with blood. The handle of the perambulator was broken, and a nut missing from it, and fitting it, was picked up at the spot where Mrs. HOGG'S body was found. On Sunday, Oct. 26th, the body of the child, aged eighteen months, fully clad, was found in a field in the Finchley-road. Save for a few scratches on the face, there were no marks of violence, and the medical men were of opinion that death had occurred either from smothering or exposure.

From the reports of the murder and the continued absence from home of Mrs. HOGG, WHEELER at the request of HOGG'S sister, accompanied the latter to the mortuary, where the body of the deceased was identified. With a ready grasp of the situation, Inspector BANNISTER repaired to HOGG'S house, at the same time despatching subordinate officers to WHEELER'S residence. At the latter place appearances were found which induced the police to charge WHEELER with the murder of Mrs. HOGG, and on suspicion of having murdered the child, which as yet was missing. In the kitchen were marked and manifold signs of a deadly struggle having taken place, two window-panes having been broken from within outwards, the fragments of glass being stained with blood. Blood was found spattered on the floor, walls, ceiling, and upon numerous articles in the room. In the table drawer were some knives, two of which had traces of blood upon them, as likewise had a heavy iron poker. Human hairs, corresponding to that of the deceased woman, were detected clinging to several objects.

At the post-mortem examination on Mrs. HOGG'S body several elongated lacerated wounds of the scalp were found, and beneath these the skull had been smashed in and fragments of bone had penetrated the brain. The throat had been cut from left to right, and from below upwards, with a sharp instrument, which had sliced off the left upper border of the thyroid cartilage, and had detached a thin fragment from the lower part of the second cervical vertebra. The intervertebral substance between the second and third cervical vertebræ was completely divided, so that the head remained attached to the body only by the skin and portions of muscle. Numerous bruises existed on the hands and wrists. On the front of the left forearm was a jagged wound as if produced by broken glass. There seems little doubt that the deceased was rendered insensible by blows on the head, and that the wound in the neck was afterwards inflicted. Probably both had been done during life, as a large quantity of blood was extravasated into and beneath the scalp, and the internal organs were all but exsanguine. The character of the injuries to the head suggested the theory that they had probably be made with the poker found in the convict's kitchen. The extent of the cut in the throat may be explained in several ways. The murderer may have exceeded the necessary means to destroy life out of sheer deviltry, or have acted with a view of simulating "Jack the Ripper's" work, and thus diverting suspicion; or may have commenced with the idea of decapitation and secreting the head to avoid identification;

or, lastly, it may have been done because of its affording the greater readiness of packing the body in the perambulator.

On WHEELER'S fingers were recent wounds, "such as might have been caused by finger nails"; and on several articles of clothing removed from her when in custody were numerous blood stains. A pair of lace curtains, which had recently been put up in her kitchen, had been taken down, and these were found stained with blood. The scratches on her hands and the stains of blood in the kitchen she tried to explain by saying that she had been killing mice. She also averred that her nose had bled violently. As shown by the evidence, however, such sources utterly failed to account for the facts presented. In the dustbin at WHEELER'S house the police discovered a button like those on Mrs. HOGG'S jacket, from which one was missing.

To return to the history of the perambulator, Mrs. HOGG was seen to take her baby out in it shortly after 3 o'clock on Oct. 24th. About half-past three a woman was seen with a perambulator at WHEELER'S door. About 6 o'clock some lodgers saw the perambulator in WHEELER'S passage. Ten minutes later it had gone, and WHEELER had left her house. Two witnesses deposed to seeing the convict wheel a heavily laden perambulator in the direction of the place where the body was shortly afterwards found. There can be little doubt that, having returned from her perilous and ghastly journey, she went home, and then removed the child some three miles away to the field in the Finchley-road, for there were no blood stains on the clothing, which could scarcely have happened had it been carried in the perambulator with the mother. After the most exhaustive search, not a tittle of evidence was discovered to connect any other person than WHEELER with the tragedy. The greatest stress must be laid on this fact, because the question has been raised whether a woman unaided could have executed so terrible and exacting a task. The answer to the question, "Could WHEELER without assistance have lifted the body into the perambulator?" is, to our minds, scarcely in doubt. Could a woman of average strength lift the body of a woman of average weight to the height of such a perambulator? On the face of it, this is clearly possible, and in the case in question experimental proof was given that it could be done. It was, moreover, shown that the body could have been packed in the perambulator, and that the latter was strong enough to sustain the burden. Assuming, for the sake of argument, that the convict had an accomplice, this would not diminish her legal guilt, for accomplices before the fact are indictable as principal felons; and that she was privy to all that happened seems beyond all reasonable doubt.

As regards the unreliability of circumstantial evidence, when not of the most cogent nature, and unsupported, two instances were disclosed at the recent trial. When the convict was searched, a key of the house where Mrs. HOGG lived was found upon her. It transpired, however, that Miss HOGG had given her the key to let herself in on the day on which the identification of Mrs. HOGG'S body took place. Again, on WHEELER'S finger were two wedding rings. Mrs. HOGG'S finger had no wedding ring on it, although she habitually wore one, and yet it was proved that neither of these rings belonged to Mrs. HOGG.

The motive for the fearful crime in this case may be considered a sufficient one. Here was a woman, hardened by sin, maddened by jealousy, desirous of possessing herself of the husband of the woman whose only offence against her, as Mr. Justice DENMAN remarked, was "that she was the wife of the man upon whom she (the convict) had set her unholy passion." But, as the learned judge said in substance in his charge to the jury, it often happened that a weaker motive than the one in question was deemed sufficient, where the circumstantial evidence was strong, to justify a verdict of "guilty."

At the trial the defence was necessarily weak. No witnesses were called, no *alibi* was suggested, no attempt made to dissociate the prisoner from the crime beyond an *ad misericordiam* appeal to the jury, a forcible traversing of the trustworthiness of circumstantial evidence, and a contention that it was not proved that the crime had not been committed by another person. We understand that an application is to be made to the Home Secretary on the grounds of the convict's alleged insanity. We hope, as we are convinced, that such will be considered with all the thoroughness that a case of this vital gravity demands.

DISCOVERIES in the prevention and treatment of infective disease seem to be the order of the day. Hardly has the medical world been familiarised with the properties of the anti-tuberculous fluid of Professor KOCH than its attention has been diverted to another series of researches in the domain of protective inoculation, which, if substantiated, are no less startling than the former. The guarded allusions made to these researches by Sir JOSEPH LISTER in his lecture at King's College delivered last week, and published in our present number, show that he at least is satisfied of the accuracy of the conclusions arrived at by Drs. BEHRING and KITASATO from their experiments carried on in the Hygienic Institute. But their publication in the *Deutsche Medicinische Wochenschrift*, although embracing details of experiments, does not reveal the essential point of their discovery. Their general conclusion is that the blood serum of animals which have been rendered immune from the action of the virus of diphtheria and of tetanus can be employed as a protective against these poisons in other animals. They defer announcing their method of procuring the immunity in the first instance; and Sir JOSEPH LISTER has only whetted universal curiosity by saying that it is by "the injection under the skin of a small quantity of a material perfectly constant in character—an inorganic chemical substance as easily obtained as any other article in the materia medica."

We regret, in the interests of science, that such important results of experimental work as that of Professor KOCH upon tuberculosis, and now this of his two pupils on diphtheria and tetanus, should be published to the world in an incomplete form. The interesting interview with M. PASTEUR published in the *Times* of Dec. 5th shows how that eminent experimentalist deprecates the premature announcement of these researches, and even regrets that

the fact of studies of the kind being in progress at the Pasteur Institute should have become known. The blame, however, as M. PASTEUR admits, does not rest with Professor KOCH, who, as we all now know, had his hand forced by higher authorities. But surely there was no such urgency in the case of these investigations of Drs. BEHRING and KITASATO, and their discovery might well have been retained until they were in a position to reveal every step of the process whereby they have arrived at their remarkable conclusions. It must be further observed—and they themselves admit it—that their research is strictly limited at present to animal experimentation; of the applicability of their discovery to these diseases in man there is as yet no evidence.

Almost simultaneously with the publication of these researches, Dr. C. FRAENKEL published (*Berl. Klin. Woch.*, No. 49, Dec. 3rd) an account of his observations, conducted by himself and Dr. BRIEGER, upon immunity from diphtheria. Their aim was to discover a means whereby the toxalbumen produced in the growth of the bacilli of diphtheria could be so modified as to serve as a protective agent. Without detailing the various ways in which they attempted and failed to get such a product, it must suffice to say that they found by heating the filtered culture-fluid to 60° or 70° C. it could be used as a protective agent, which, injected subcutaneously in the guinea-pig, rendered that animal free from the effects of subsequent inoculation with the diphtheria virus. As a further result of their experiments they arrived at the conclusion that the material which afforded this protection was not of the same nature as the virus itself; and that therefore the result was not due to any process of attenuation by heat. For if the culture liquid were only heated to 55° it still retained its specific toxic property; whilst if heated to 100°, it lost its protective qualities. The inference was that the culture fluids contain at least two kinds of toxalbumens, the specific poison of diphtheria and its antidote, and that the former was destroyed by a slightly lower temperature than the latter. We use the word "antidote" in a general sense, for it is important to bear in mind that the material does *not* prevent the action of the diphtheria virus after this has been inoculated. If anything, it seems to hasten the fatal termination. As a protective it has, however, so far succeeded in their hands in these experimental cases. Hence, so far as can be at present judged, the discovery of Drs. BEHRING and KITASATO is likely to be more fruitful of beneficial results.

In the last place, it may be observed that these researches entail the acceptance of the specific nature of the bacillus of LOEFFLER for diphtheria, and the bacillus of NICOLAIER for tetanus; in respect to which latter it may be interesting to cite the conclusions lately arrived at in a lengthy study of the subject of the etiology of tetanus, by Dr. VERHOVGEN and BAERT of the Brussels University.[1] They declare that tetanus is an infective and specific disease; that the specific bacillus may be met with, outside the infected organism, in the soil, and may be found in the hairs of the horse or other animal, in the dust of hay, on surgical instruments &c., and that the horse especially may be a medium of the transmission of the virus, just as the bovine species may be of that of tuberculosis; and they consider that as regards tetanus the "reign of empiricism" is past, and that new therapeutic methods, based on these truer conceptions of its pathogeny, may be arrived at. That hope seems now to be in progress of fulfilment.

[1] Premières Recherches sur la Nature et l'Etiologie du Tetanos. Bruxelles: H. Lamertin. 1890.

IN a recent number of *La Médecine Moderne*, Professor GERMAIN SÉE discusses the always interesting and important subject of the treatment of hepatic colic. The obvious primary indication is to promote the expulsion of the gall-stone, and this, Professor SÉE urges, should be accomplished by remedies which increase the flow of bile. The sufferings of the patient are, however, usually so intense that we are compelled to consider first the application of measures directed to the relief of pain. Of these by far the most speedy and effectual is the hypodermic injection of morphine. This usually acts very well, but Professor SÉE warns us that in some cases the patients, after a fit of vomiting, fall into a state of alarming collapse, even when only one centigramme of morphine has been injected. We must also bear in mind that morphine is one of the substances which diminish the biliary secretion. Of antipyrin Professor SÉE says that "it will only render mediocre services in this matter, and that we should not lose time by prescribing it." Chloral and chloroform have a less certain action than morphine, but possess the advantage of not hindering the secretion of bile. Professor SÉE advises that chloral, if used at all, should be given by enema, as it will not be well tolerated by the stomach. He is disposed to believe that both chloral and chloroform may act favourably by relieving spasm and promoting the relaxation of the walls of the bile-duct.

The second and most scientic indication is to increase the biliary secretion. The mere presence of the gall-stone, and the irritation which it excites, have a tendency to augment the flow of bile, but help may be obtained from the use of various medicinal remedies. Of cholagogues Professor SÉE enumerates bile itself, turpentine and its derivatives, terpine, terpinol, benzoic acid, salicylate of soda, and olive oil. He points out that bile is inadmissible, as its employment tends to make the biliary secretion thicker rather than to render it more fluid, as is desirable. Turpentine and its derivatives are comparatively inefficient cholagogues, but are nevertheless of some value. The "Durande remedy" owed its success to the presence of turpentine. Of two only of the remedies enumerated does Professor SÉE hold a high opinion—viz, salicylate of soda and olive oil. The cholagogue action of the former of those, although pointed out by RUTHERFORD, is hardly sufficiently recognised in this country. It seems to increase the entire biliary secretion, but more particularly its fluid elements. According to Professor SÉE, it not only acts as a cholagogue, but has also an analgesic effect, which is obviously desirable in the condition under consideration. It is advised that salicylate of soda be given with large quantities of fluid, as this seems to assist its action.

The cholagogue action of olive oil has been a subject of dispute, and was denied by BIDDER and SCHMIDT. The later experiments of ROSENBERG, however, seem to show

that if the animal experimented upon be kept upon a normal diet, and olive oil be administered, "a considerable augmentation of the biliary secretion, especially of its fluid part, begins in from thirty to forty-five minutes, the maximum increase is obtained from the third to the fifth hour, and there is also a considerable increase of fatty acids which are capable of dissolving cholestearine." Professor SÉE believes that clinical experience proves that the administration of olive oil both promotes the removal of the gall-stone and relieves the attendant pain and jaundice. Its *modus operandi* has been the subject of some fanciful theories. Thus it was at one time supposed that the oil actually ascended the duct and acted locally upon the impacted gall-stone. For this idea there was never any adequate foundation, and it must suffice to say that the administration of olive oil tends to increase the flow of bile and to make it more liquid. The chief objection to this line of treatment is that the oil is often badly tolerated, and that even if it be well borne at first, intolerance is quickly excited.

Professor SÉE finally discusses the remedies that are contraindicated in an attack of biliary colic. Chief among these are those medicaments which tend to excite strong peristaltic movements of the intestine, as these are apt to be propagated to the bile passages. Hence strong purgatives are injurious. Purgation should only be employed after the crisis is over, and even then with caution, as it may excite a fresh attack. Nevertheless, it cannot be wholly dispensed with, as it is desirable to clear out the bile that has found its way into the intestine. We should also avoid those substances which diminish the biliary secretion, of which Professor SÉE enumerates the salts of potash, calomel, iron, copper, morphine, atropine, and strychnine.

These recommendations—coming from so esteemed a source, and founded upon such ample physiological experiment and clinical trial—will be received with the respect which they deserve. Probably the point which runs most counter to ordinary practice is the advice given regarding the use of purgatives. At the crisis of the malady, when the duct is contracting violently and the patient is in extreme agony, no one would dream of giving a purge; but a little later on, when the pain has been subdued, while the impaction remains and jaundice is deepening, moderate purgation with such an agent as Glauber's salt has often proved the most efficient of all methods of treatment. Turpentine does not seem to have justified the hopes that, on theoretical grounds, were raised regarding its value in biliary colic. Salicylate of soda and olive oil are well worth a trial, and Professor SÉE's recommendation will ensure their wide employment. Whatever medicinal remedies we select, it seems evident that copious draughts of warm water, to which a little soda has been added, are invariably advantageous, and it is well that so simple a measure should not be overlooked or neglected because of its simplicity.

THOSE who understand Parliamentary procedure consider that the promoters of the Midwives' Registration Bill have not been very fortunate in the ballot. It was down, indeed, for Tuesday night, but it requires little imagination to believe that Members of Parliament bent on Christmas holidays would not defer the rising of the House for a Midwives Bill, and so the event proved. The Bill was not reached, and for the present it is not pressing. This postponement must not lull into apathy those who feel strongly on this subject. They will be well advised in making the most of the time for framing practical amendments that have a chance of being carried. Such amendments should be few and well ordered. The last operation of the Legislature in regard to midwifery was a very significant one. It was achieved by the Act of 1886, and consisted in raising midwifery to a platform of equality with medicine and surgery. It was a message of just consideration to the women of the kingdom, assuring them that whatever could be done for them in medical education should be done, and that the men who should thereafter be received into the profession should be required to give as perfect guarantees of their knowledge of Midwifery as of Medicine or of Surgery. The medical bodies, including the Medical Council, have not yet risen to a full appreciation of their duties under the Act of 1886, but they are on their way. As a part of medical science, midwifery has become one of the most beneficent of the professions, and the mortality of childbed has been reduced to a minimum that would have astonished DENMAN or RAMSBOTHAM, or even SIMPSON.

It is not remarkable that some persons view with concern a Bill which seems to them altogether retrograde, and that proposes to relegate the midwifery of the poor back again to the care of imperfectly educated women who know nothing of medicine and still less of surgery. We have much sympathy with them, and would gladly enact, if we could, that lying-in women should only be attended by persons fully qualified in the three great branches of the medical art—medicine, surgery, and midwifery; and that no woman should be entitled to call herself midwife who was not qualified in all the three branches of medicine. The life of the lying-in woman is, in every aspect of it, one of high interest and importance, and the State ought to do what it can to guard it. The poorer she is, the more is she entitled to every care and consideration the State can give her. We are not prepared to say that the State should refuse all recognition of midwives. They existed before the medical profession existed, and till we are much nearer the millennium they will be in demand by those who are too poor to employ medical men. But it should carefully restrict the midwife in her functions. It should make her clearly understand that she is only a superior nurse waiting upon nature, whose duty it is to summon a medical man whenever there is any departure from natural labour. It should prohibit from practising for gain as midwives all who have not been instructed in the conditions of safe delivery, and it should provide for sound guarantees of character and rules of conduct. While we cannot go the length of some members of the profession, who would continue the system which leaves thousands of ignorant women to call themselves midwives, we would urge on all who have the power to help in making the Midwives' Bill as useful a measure as it can be made—one that will do the least amount of harm and the greatest amount of good. While there must be some recognition of those already in practice, it ought by

no means to be an indiscriminate one. They should be prepared to show some real work and profit of work besides giving evidences of character. The dangers of unprincipled and ignorant midwives, not only as regards mothers, but children, is a subject that has not had sufficient consideration.

Certificates of still-birth are already given somewhat ominously. A correspondent lately showed that in his village the midwife gave one in every case where the child did not live more than five hours. In Liverpool, in 1889, in eight cemeteries there were 483 children buried as "still-born." Such figures show the necessity of having evidence of character, as well as of training, in midwives, and of looking closely at these certificates of still-birth. The critics and opponents of this legislation will do much good if they will devote their energies to procuring amendments in this sense. They cannot permanently avert, but they may powerfully control legislation.

Annotations.

"Ne quid nimis."

THE COLLEGE OF SURGEONS AND THE UNIVERSITY OF LONDON.

A WELL-ATTENDED meeting of the committee of the Association of Fellows, specially convened for the purpose of considering the negotiations between the Senate of the University of London and the Council of the College of Surgeons, was held on Tuesday, the 9th inst., at 5 P.M. Mr. Lawson Tait's letter, published in THE LANCET last week, was read, and, after discussion, the following resolution was unanimously adopted: "That the committee of the Association of Fellows desires to record its emphatic protest against any final settlement between the Council of the College and the Senate of the University of London in the matter of the reconstitution of the University without the Council of the College having consulted either the Fellows of the College, or, if they cannot be convened separately, a general meeting of Fellows and Members." A memorial to the Senate was drawn up and adopted, and it was resolved that it should be sent to the Senate of the University without delay, copies being forwarded to the Lord President of the Privy Council, Lord Selborne as Chairman of the recent University Commission, and the Council of the College. This memorial we publish in another column. It was also determined by the committee that a general meeting of the Association should be summoned by advertisement to meet at the rooms of the Royal Medical and Chirurgical Society on Saturday, 20th inst., at 4 P.M. At this meeting the committee will submit the action, which the urgency of the occasion has compelled it to adopt, to the judgment of the Association, and, in view of the great importance of the proposed amended scheme and its vital interest to the Fellows of the College, will invite all Fellows of the College who like to attend to take part in the discussion. Apart from the bearing of the scheme upon the position and prospects of the metropolitan and provincial schools, and on medical education and examination generally, it is evident that the negotiations between the Senate of the University and the Council of the College, which at any moment may be brought to a final settlement behind the backs of the Fellows and Members of the College, raise once again the broad constitutional question whether any important change in the constitution and external relations of the College ought to be effected by a body of twenty-four Fellows without any reference to the Fellows and Members who constitute the body corporate. By taking its stand against the exercise of autocratic authority by the Council of the College, and endeavouring to raise the position of the Fellows of the College of Surgeons and give them an influential voice in its affairs, the Committee of the Association is fighting the battle of the Fellows as a body, and, if properly supported, would be able to obtain concessions from the Council of the College which would add dignity and influence to the Fellowship, and materially promote the welfare of a great public institution.

THE RISKS OF KOCH'S TREATMENT.

IN the very interesting communication from our Special Commissioner at Berlin reference is made to the dangerous symptoms which may attend the use of injections with Professor Koch's liquid; and although he explains the fatality in some of the fatal cases to be due to the ordinary course of the disease under treatment, there can be little doubt that in a few regrettable instances there has been evidence of disastrous results. The fact is the profession have been placed in possession of a most powerful poison, and that as yet experience of its effects—which, like all poisons, vary in individuals according to their special idiosyncrasies—is so small as to necessitate the most cautious employment of it; this, too, quite apart from cases of pulmonary and laryngeal tubercle, where the local reaction set up by it may of itself produce alarming and dangerous symptoms. Therefore we endorse fully our correspondent's view as to this being an agent (and it is still to be proved that its action is curative) which should not be employed in general practice, but only under circumstances admitting of the strictest continuous medical surveillance. A like conclusion is stated in the excellent report drawn up by Drs. Saundby, Simon, and Barling (*Birmingham Medical Review*, December), who urge the greatest circumspection in dosage and conditions of administration. We believe, for example, that it is rash to commence the treatment of lupus with as much as 0·01 grm., as recommended by Professor Koch, the severity of the local and general reaction being in many cases so extreme.

THE INDECENT ADVERTISEMENTS ACT.

SOME correspondence has recently passed between the secretary of the Medical Defence Union and Mr. Lockwood, Q.C., M.P., on the subject of extending the provisions of this Act so as to catch advertisements of the character aimed at by the statute which are at present exempted by its terms. A very flagrant violation of the spirit of the Act is the exhibition of bills of the prohibited character upon sandwich-boards. It would seem that the ingenuity of the draughtsman has failed to comprehend this particular form of advertisement in the language of the section which should apply to it, and consequently the same bill which, if affixed to a wall, would render its exhibitor liable to the penalties of the statute, may be legally displayed upon a "sandwichman's" board. Advantage has been promptly taken of this singular omission in the Act by the quacks of Birmingham, and the inhabitants of that town are consequently subjected by reason of the Act to an aggravated form of the very annoyance against which the Act was passed as a protection. Such an anomaly cannot be allowed to continue, and we have no doubt that the promoters of the original Bill will easily obtain from the Legislature such a supplementary enactment as will avail to suppress this impudent evasion of the statute. A more serious difficulty is presented by the problem of dealing with

indecent advertisements which appear in newspapers. These were advisedly excluded from the present Act when it was under discussion in 1889, and it is easy to perceive that they stand on a very different footing from the hand-bills, pamphlets, and the like, against which the Act is specifically directed. The censorship of the press in any form is a discipline of which Englishmen are peculiarly intolerant, and it is rightly urged that newspapers are published, not on the undivided responsibility of one or more advertisers, but on that of an editor who has not only public opinion to consider, but who also discharges his functions under the sanction of the law of libel. No doubt the technical indecency created by the statute of 1889 is not such an indecency as suffices to bring an offender within the reach of the law relating to obscene libels, but there is substance in the contention that it is not necessary, and therefore not desirable, to subject the newspaper press as a whole to exceptional legislation. In one particular we think that the secretary of the Medical Defence Union has adopted an unsound and unsafe line of argument. He observes with perfect truth that one result of the passing of the Act would naturally be to benefit the medical profession by stamping out a low class of unqualified practitioners. This, he says, is the point of view from which the Council of the Society approach the discussion. We quite recognise that the professional interests involved both must and should increase the zest with which a medical body will take part in the discussion. But they do not furnish the whole and sufficient cause of it, and they are not likely to have very much weight with the Legislature. It is because the interests of the profession are bound up with those of the public that they will be promoted by sound legislation on any such subjects as the one now under discussion. While that is the case medical practitioners and medical societies can well afford to forego the merely professional point.

CHOLERA INTELLIGENCE.

AT the last meeting of the Consultative Committee of Public Hygiene in France, Mons. Monod and Dr. Proust gave an account of the present condition of France and Spain as regards cholera. According to the former the two sanitary posts at Cerbère and Hendaye are still maintained, but it is generally recognised that, so far as present danger to France is concerned, the Spanish epidemic has ceased. With regard to the Levant and the East generally, Dr. Proust looks upon the state of Syria as still very serious, and this especially by reason of the maintained extension of cholera northwards, in the direction of the Black Sea, a matter to which we recently drew attention. The villayet of Adana is still threatened, and both Tripoli and Latakia are in danger. On Nov. 13th an extraordinary sitting of the Council of Health was held at Constantinople, with a view to the enforcement of the prophylactic measures necessary to prevent further extension of cholera from Syria.

LIFE ASSURANCE AND THE MEDICAL PROFESSION.

OUR readers will remember that in response to suggestions which had been put forward by our various correspondents on the subject of life assurance and the medical profession the directors of the Standard Life Assurance Company contributed to our Life Assurance Supplement a notice of their office which contained a new table specially designed to meet the ascertained requirements of medical and other professional men. The table has now been published in leaflet form, together with a synopsis of the advantages offered by this Company's scheme of business and a note on the subject of short term policies. The expression "short term" is hardly applicable to the particular form of the assurance contract to which we have drawn attention, since the terms which we have suggested are comparatively long, running for twenty, twenty-five, or thirty years. It is stated that the directors of the Standard Office are prepared to do business on these lines; but we observe that they do not give a table of rates, and that their comments on the table are conceived with a view to the discouragement of its use. It is said that a difficulty may arise about renewing the assurance at the end of the term, and that in any case such renewal could only be effected on onerous terms as to the premium. The answer to this observation is that such policies would be intended expressly to provide against the havoc wrought by a man's premature death during the period that a dependent family is growing up in his home. When children are launched in life and self-supporting, this exact need for the assurance has passed away, and no reasonable man will look upon the money as ill spent which has secured to them in the meantime the incalculable advantage of being secure against the risk of financial ruin. The premiums are no doubt irrecoverably gone, so is the money spent upon their necessaries of life, and it would be as reasonable to regret the one expenditure as the other.

RECOVERY FROM DROWNING.

"ABOVE all, avoid zeal," was a motto frequently impressed and constantly acted upon by the French "politic man" and wit, M. Talleyrand. Instances, on the other hand, where the absence of this factor of existence or delay in its application is fraught with disaster, are numerous enough in the practical region of everyday life. It is, for instance, reported that the body of a man who had been capsized from a sailing-boat on the Thames, was picked up by a boatman, who towed it ashore behind his boat. A medical man saw the body on shore, and confirmed the boatman's view that life was extinct. Two bystanders, however, who were more sceptical and more sanguine than the others, immediately commenced the vigorous application of restorative treatment. In two hours their diligence was rewarded by visible signs of returning animation in the man. Further treatment was proceeded with and the man is now alive and well. The coroner for Essex characterised it as the most remarkable case of "recovery from drowning" that had ever come under his notice. The obvious warning cannot be too often reiterated, that those engaged in the resuscitation of the drowned should not be easily discouraged in their efforts. First aid men should, more especially in such cases, add to their skill, patience, hope, and a fulness of zeal.

PSOROSPERMS IN CANCER.

IN a paper read last month before the Havana Society of Clinical Studies by Dr. Albarran on the Micro-organism of Cancer, the author detailed his reasons for believing the bacterial cause of cancer to be a body belonging to the coccidiæ, or, as they are sometimes called, psorosperms, one of the five divisions of the sporozoaria. Some years ago, while examining a cancer of the jaw, he came upon some rounded bodies which were considered by MM. Malassez and Balbiani to be psorosperms analogous to those found in the liver of rabbits. Subsequently they were discovered by M. Darier in a skin disease which is now called "psorospermosis follicularis vegetans," and similar bodies were found in the centre of the nests in epithelioma, especially in those which are in an early stage of development. Both Pfeiffer and Babes have described bodies of similar nature which they have seen in cancers, and subsequently Darier, Wickham, and others demonstrated their existence in Paget's disease and in various forms of cancer. Dr. Albarran himself described at the Berlin Congress a disease of the bladder con-

sisting of a proliferation of the epithelium of irregular distribution giving the inner surface of the organ a papillary instead of a smooth appearance, psorosperms being found in the epithelial urinary casts in their two principal forms—that is to say, rounded bodies and spore-bearing cysts; this peculiar affection he styled "vesicular psorospermosis," and compared it with vesical epithelioma containing psorosperms. Although the cultivation of these bodies has only been very imperfectly carried out, and no inoculation experiments have been made, Dr. Albarran considers that when we follow the change from Paget's disease to true epithelioma, and compare vesical psorospermosis in the human subject and the disease molluscum contagiosum of birds, which is admittedly of psorospermic origin, with epithelioma containing psorosperms, there is a good deal of reason for regarding these organisms as the probable cause of cancer. He goes on to give some directions for finding them, which it is not always an easy task, as they do not readily take a distinct stain. If very small portions be hardened in osmic acid and alcohol, and the sections stained with carmine combined with alum or with Ranvier's picrocarmine, the psoroperms will be of a greenish yellow, which is distinguishable from the rose colour of the surrounding tissue. A search should be made with a power of 100 to 150 diameters in the epithelial masses for rounded cells, badly stained, larger and more refracting than the rest. These should then be examined with a power of 400 or 500 for the detailed structure—its intra-cellular encysted state, its rounded or elongated form, and the granulations of its protoplasm. Sometimes the membrane of the cyst can be seen to have a double contour, and between it and the retracted protoplasm a clear space can be detected. Sometimes also larger cysts may be seen containing a considerable number of spores in the form of elongated corpuscles. It is needless to say that the author of the paper referred to entirely disputes the claim of Scheuerlen's bacillus to be the cause of cancer.

ITALIAN HONOURS TO GERMAN PHYSICIANS.

AN Italian correspondent writes:—"At the meeting of the Accademia Medica di Roma on the 7th inst. the President, Professor Guido Baccelli, forwarded to Dr. Koch the following telegram, which had been voted with acclamation:—'The Royal Medical Academy of Rome sends to its illustrious Honorary Fellow, Robert Koch, its tribute of applause and admiration for his profoundly scientific and humanitarian discovery.' At the same meeting the Royal Medical Academy, again at the instance of its President, seconded by the acclamation of the assembled associates, set aside *ad hoc* its formal regulations to nominate Rudolf Virchow a 'Socio d'Onore' (Honorary Fellow), and resolved to contribute 500 lire (£20) to the fund for the gold medal which is to be struck for this 'maestro dei maestri' (master of masters) on the approaching completion of his seventieth year."

ARTIFICIAL COFFEE BERRIES.

THE art of adulteration has made further progress. Many persons buy coffee whole, thinking that by grinding the berries themselves they avoid all risk of adulteration. It is so easy to mix with ground coffee chicory or other less inoffensive ingredients. M. Ludovic Jammes, inspector, reports, however, in the last issue of the *Revue d'Hygiène*, that a number of commercial travellers are offering retail grocers coffee berries at a price which yields 60 to 100 per cent. more than the usual profit. Good coffee is at present very dear, and when the tradesman expresses his surprise, the commercial travellers, so as to cover their legal responsibility, explain that the berries are artificially manufactured; and to avoid detection should be mixed with real coffee. M. Jammes gives, however, minute details to facilitate the detection of this fraud. The slit in the false berry is neither so long nor so deep as in the real berry. The colour is well imitated, but the false berry does not feel so smooth; it is also much harder, cannot be so readily broken with the teeth, and is often hollow inside. A real coffee berry can be easily broken by introducing the nail in the slit, while the false coffee will resist very hard pressure. The false coffee has a somewhat faint and nauseating taste. It seems to be composed of vegetable glands and the flour of some cereal. A paste is made with some such mixture, placed in a mould, and torrified. The fraud is therefore absolute; the berry does not contain even the smallest percentage of coffee. It is to be hoped that these revelations will put an end to this fraudulent trade, otherwise the French will soon lose the reputation they have so justly won of being the best coffee-makers in the world.

THE VENTILATION OF CHURCHES.

NOWHERE have the problems of ventilation been found to be more difficult of solution than in large public buildings. We might say in regard to many if not most of these that in this particular matter bad is the best result that has been attained. It must also be admitted that the state of churches generally proves the rule above stated, but not by way of exception. We may well ask, Why is this? Surrounded with spacious windows, furnished with ventilating panes, with several doors, and with a high and arched roof, why is it that their atmosphere during times of worship is so often offensively close? In different cases we should probably find different structural deficiencies contributing to this result, with, however, the same consequence in all—defective aeration. One, if not the principal, fault in construction in many of the older buildings is the want of outlets, or of a sufficient number of them. Such openings as do exist are better fitted to act as inlets than as exits. In buildings thus constructed a change for the better would be most fittingly inaugurated by the formation of two or more large roof outlets with revolving cowls. The allotment of floor space is also an important consideration. This, however, is as a rule contrived with a reasonable regard for health considerations. It is only in the event of overcrowding that all individual rights are overwhelmed in the common crush, and wholesome breathing air becomes more scarce than standing room. The gallery system, also, if adopted on any considerable scale, is open to adverse criticism. By accommodating more sitters it necessarily increases what we may call the breathing surface, while at the same time it lessens the available air space. If constructed at all, the gallery ought to be of the lightest description compatible with due stability. The correction of the evils we have thus briefly touched upon, and especially the formation of roof outlets to promote the escape of heated and impure air, will go far to obviate such occurrences as that of ladies fainting in church, which under present conditions is only too common.

LEPROSY IN COLOMBIA.

AN interesting report has been presented to the Central Board of Hygiene of Colombia on the subject of the distribution of leprosy in the Republic. The Board of Hygiene some time ago issued a circular to the authorities of the towns in the State to the number of 920, requesting to be informed of the number of inhabitants affected with leprosy. Only 122 of their circulars were answered, but these revealed the existence of more than 1700 lepers. There appears to be little doubt that the disease is spreading somewhat rapidly. In one province, that of Santander, there are more lepers in twenty-six towns than in the remaining ninety-six in other provinces from which returns were made. An important

fact was elicited concerning infection—viz., that in dry districts with a high temperature (77° F.) no new cases occur, so that in such localities lepers who migrate from less favoured spots do not spread the disease, this fact leading the inhabitants to deny the contagious nature of leprosy. It appears that lepers from Ecuador are in the habit of going to reside in the north of Peru, where their presence is not objected to. According to a paper read last year by Dr. Enrique Garcés before the Medical Society of Cauca, a favourite locality with these immigrants is Piura, the patients thinking that they have a good chance of improving there, and the inhabitants evincing no disposition to deny them hospitality. The report goes on to remark that most infectious diseases are limited in their ravages by climatic conditions (yellow fever, for example, does not spread at an altitude of more than 1800 metres, or in a temperature below 68° F.), and that therefore leper colonies ought to be located in spots which fulfil the conditions which are most inimical to leprosy. There is no doubt whatever in the minds of Colombian medical men about the infectious character of leprosy under ordinary conditions, and it only remains for the Government to take steps which are indicated pretty clearly by medical opinion to combat the spread of the disease in the Republic.

SOME DANGERS OF THE FOOTPATHS.

WE may say without much fear of contradiction that no warning is more familiar than that which advises young and old against that danger of the footpath—orange peel. This term, indeed, is but a symbol, a herald of its class. Behind it, as a type, are marshaled all the great company of slippery trifles, the innumerable fruit and vegetable parings that are daily cast about pavements, which are never too clean. The nuisance thus caused is a somewhat serious one, and might even excuse the plea put forward by some in respect of it that the real preventive is to be sought in a punitive by-law. When we reflect, however, that the offenders in this matter are commonly children, that the work of street clearing is in constant activity, that every pedestrian has some choice in directing his steps, and that a fall is not necessarily serious, we must admit some doubt whether the subject is worthy of so great reforming energy. We would be disposed rather to rely in the meantime on such educative efforts as have hitherto been applied, and not without success, to the same purpose. It is in aid of these that we have now directed attention to this always untimely custom of the fruit season. Another somewhat similar habit, that of throwing down lighted matches and the like, is distinctly more hazardous in itself, and less controllable in its possible consequences to unobservant wayfarers. In our opinion, a street by-law dealing with this very dangerous practice would not be superfluous, especially since it would reach a class of persons who for the greater part are of responsible age.

JENNER AND KOCH.

Habent sua fata magistri; the reception and diffusion of Jenner's great discovery was different from that of Koch by all the differentiation between the close of the eighteenth and the close of the nineteenth centuries. Jenner, after twenty-one years spent in maturing and perfecting his idea, had to wait long, in those days of slow travelling and undeveloped journalism, before it became public property. Koch, on the other hand, has positively had to suffer from the feverish haste with which his "cure" has been caught up and applied. Vaccination had for years to struggle with opposition and distrust; the injection of the Koch liquid has been so promptly appreciated and put in practice that it is already sharing the reaction inseparable from too sanguine expectation. It is in Germany that the contrast in the fortunes of the two discoveries is most keenly felt, and Stricker's classic monograph on vaccination is appealed to for points of dissimilarity between the slow advance of the one and the "leaps and bounds" of the other. It was not till July, 1801, that the Prussian Medical Department, for the first time on the Continent, issued instructions to all "Collegia Medica et Sanitatis" to give vaccination a trial. In June, 1802, the same official authority lent its *imprimatur* to the practice, and in October of the same year the Anti-Small-pox Vaccination Institute was established at Berlin. Popular literature, sermons from the pulpit, dramatic representations, and copy-book aphorisms in schools, had all to be "pressed into the service," as means to awaken the public mind to the importance of vaccination. A specimen of the "Vorschriften zum Schönschreiben" by which the juvenile intellect was weaned from the dread of the prophylactic innovation is the following, taken from a publication at Coburg and Leipsic in the year 1805:—"Ignorant and ill-disposed people, who will neither understand nor adopt what is good, have spread abroad lies of all kind against health-giving vaccination." At Magdeburg about the same time, "The Cow-pox," a family scene in one act, was produced and dedicated by the author, Professor Rambach, to Dr. Welper, as "the saviour of his children," the piece closing with the introduction on the stage of the children in question, each with well-developed vaccination marks on his arm. By such methods had the good German public, at the beginning of the nineteenth century, to be educated out of their well-grounded dread of inoculation, and into a hearty adoption of vaccination. With Koch's discovery, on the contrary, the profession is labouring to tone down a too roseate expectancy, and thinks it has scored a point when the question has come to be asked: "At what stage of tuberculosis is cure possible?" Meanwhile Koch himself, who is in no way to blame for the unreasoning enthusiasm his discovery has evoked, continues to perfect the system which has already cost him sixteen years' work.

STANDING BAREHEADED AT FUNERALS.

THE present season has been a sharp reminder of the fact that December has come, and with it chilling days alternated by a rise in the thermometer of many degrees in the course of a few hours, to be followed by its fall with equal suddenness and intensity. Such weather seals the fate of many elderly and delicate persons, while it also tries very severely the constitution of the strongest should they be exposed while standing for any length of time to a cold wind, after a previous interval of mild weather. The Rev. F. Lawrence, the indefatigable secretary of the Church of England Funeral, Burial, and Mourning Reform Association, has addressed himself to what is in our judgment the most important reform of all those which relate to the living. It is only lately that the attention of the public has been drawn to the reverent though dangerous practice of standing bareheaded round a grave in cold or inclement weather. The mere exposure of the head would be hazardous enough, more especially if it were a bald one, and belonged to an elderly or delicate man. But it is not all. Very frequently the ground is damp, or covered with snow. Not unfrequently (and this is much to be deprecated) an address of some length is delivered by the officiating minister, the latter being covered or inured to the exposure, while the mourners are not. Mr. Lawrence has sent us a suggestion which is given elsewhere, and which is well worthy of consideration. But we trust that the practice adopted by some of the clergy of only reading at the grave that portion of the service which it is absolutely necessary to read there in wintry weather will be generally adopted. Moreover, the practice of standing bareheaded has no authority but

custom, and custom can unmake as well as make, especially if the practice be a bad one. The clergyman may wear his academical cap, or a skull cap, the Romish priest his biretta, while other ministers adopt some covering. Laymen, in their turn, have very recently adopted a custom which may be followed with advantage. It is to retain the hat, or usual head covering, raising it at the end of each prayer. This has the double advantage of showing reverence to the dead and to the solemn service which is being read, and a due regard to health, the most precious gift which man can have.

LAVATORIES IN RAILWAY TRAINS.

FOLLOWING the method, if not the example, of the Midland Railway Company, the directors of the Great Western Railway have decided to provide lavatories in connexion with all classes in their long distance trains. The travelling public will hail this change with satisfaction, and will hopefully expect its introduction on the other great lines of traffic. It is recommended alike by considerations of comfort and of health. To all it ensures at least a distinct gain in convenience, while for many sick and weak persons who may have to travel by rail it signifies the satisfaction of a crying need. Let us now only repeat a former caution, and impress the necessity of preserving by due care and cleanliness on the part of passengers and by frequent official supervision all the wholesome amenity which belongs to this useful arrangement.

THE HOSPITAL ABUSE QUESTION AT LIVERPOOL.

AN important report has been issued by a committee, appointed to consider the above question, on the following points: 1. To decide on the best means of checking the abuse of public medical charities. 2. To consider what classes shall be eligible for charitable relief. 3. To consider how the ineligible classes shall be provided with efficient medical treatment. 4. To make suggestions regarding the general working of the medical charities. Briefly the committee advises as follows: Careful inquiry into the circumstances of out-patients and the rejection as ineligible of those who are in receipt of 20*s.* a week for single man or woman; 25*s.* a week for man and wife, *plus* 1*s.* per week for each child under fourteen; no in-patient limit, a uniform system of hospital accounts, and the establishment of a central committee to advise on the administration of medical charities. There is one other significant piece of negative advice. They decide not to recommend the interposition of a new institution between hospitals and medical practitioners, because it is found that qualified practitioners give their services at rates within the reach of those ineligible for charitable relief. The advocates of provident dispensaries will regret this finding of the Liverpool Committee on the ground that a small, systematic, methodical payment for medical purposes is a good habit, and likely to give the medical man more remuneration than a casual system. There is no doubt that the provident dispensary is at present unpopular with the profession, and suspected of abuses similar to those which discredit the out-patient hospital system. It does not follow that it cannot be cleared of such suspicions by sound rules.

SANITARY BUREAUX IN FRANCE.

THE organisation of sanitary services in France is gradually progressing. Eleven of the more important towns had created municipal bureaux of hygiene, and now two more towns may be added to this list. The first is Besançon, the principal town of the Department of the Doubs. It has a population of 56,511 inhabitants, and its newly formed sanitary bureau will resemble in most particulars the similar institutions that already exist in the towns of Havre, Reims, Amiens, Pau, Saint-Étienne, Nancy, Grenoble, &c. Dr. Baudin, chief physician of the departmental asylums, has been appointed director of the sanitary bureau, with M. Jeannot, director of the town waterworks, as assistant and manager of the administrative portion of the business. The second town is Lyons, and there a very severe competition was organised for the selection of the chief of the sanitary bureau; so severe, indeed, that only one candidate has so far ventured to present himself. The competition included a practical examination in bacteriology. The water of the Saone was to be analysed chemically, and its living organisms described. For this purpose three specimens of the water must be examined, the first taken before the river reaches Lyons, the second as it passes through the town, and the third after it has left Lyons. Two months are allowed to the candidates to make these investigations. The tendency in France to give too much prominence to mere theoretical rather than practical questions seems, in this instance, indicated by the paucity of candidates applying for the important post offered. This is unfortunate, though perhaps it does not matter much for the moment, as these sanitary offices possess but few powers, and are of more use as educational institutions than as active centres of sanitary police.

THE ELECTRIC LIGHT.

IT is currently reported that Her Majesty the Queen has discontinued the use of the electric light in her private apartments, on the ground that it is injurious to the eyes. We are inclined to believe that this is founded on some misapprehension, for when properly protected by opal glass or by shades, the electric light can be toned down to any desired extent, and it certainly possesses many advantages over gas. It is more easily lighted and extinguished, less dangerous, more cleanly, free from odour, gives off little heat, does not spoil the air, is quite as steady, and, so far as we can see, has only one drawback—that, namely, of being more expensive.

THE WORKING OF THE LUNACY ACT, 1890.

NUMEROUS complaints reach us on the subject of the unsatisfactory and inefficient means supplied for the proper carrying out of the provisions of the New Lunacy Act. The number of special justices appointed under the Act is totally inadequate to the requirements, and thereby a cruel wrong is frequently found to be inflicted upon the unfortunate lunatics. The following is a case in point. Before the Droitwich Board of Guardians last week a MRS. COXELL attended to make a complaint in regard to the case of a young woman named Narcisse Warren, who, she said, was raving mad.

"The medical officer, Mr. Coombs, was fetched to her on Monday, and made an order that she should be removed to the lunatic asylum. Mr. Willetts, the relieving officer, received that order; but it had not been carried out, and Mrs. Coxell now complained that the patient was in a dangerous condition, that it took two men to hold her down, and that she had not had a particle of food in her mouth for three days. Mr. Willetts admitted that the statement made by Mrs. Coxell was correct, and he was sorry the delay in removing the patient should have arisen, but it was no fault of his. Under the New Lunacy Act only certain magistrates appointed by quarter sessions were authorised to sign orders for the removal of lunatics. As soon as he received information of this matter on Monday afternoon he went to Worcester, to the nearest magistrate who was qualified, Colonel Bellers. He was ill and could not attend to the matter. He (the speaker) next went to Mr. Hill's, in Worcester, and Colonel Middlemore's at Hallow, who were also

qualified, but both of them were out. He was going from one place to another until midnight on Monday. On Tuesday he went to Mr. Ames, and he was just on the point of signing the order when he found he was not one of the justices appointed under the Act, and therefore could not do so. The only thing he could do was to leave two men and a woman in charge of the lunatic. Warren was a friendless woman about twenty-two years old. She went to lodge at Fernhill Heath with a woman named Lawrence, in whose house she still remained, and there was no doubt she was in a state of dangerous madness. In his (the speaker's) opinion there were not enough magistrates in the district qualified to act in an emergency of this kind. The same difficulty might arise in Ombersley or Waresley, because those places were eight or nine miles from any justices who were qualified."

The guardians discussed the matter, and one member of the board pertinently asked who would have been responsible if this woman had happened to kill anyone before she was removed. In the end the clerk was instructed to lay the facts of the case before the Lord Chancellor, together with a representation that in the opinion of the board the number of magistrates appointed to act in the Droitwich district was insufficient. We maintain, as we always have done in relation to this Act, that its obstructive injustice as regards the certification and early asylum treatment of lunatics will not cease to make itself felt until the powers of the magistrates or justices concerned are limited to certifying to the *bona fides* of the doctors and friends who are acting in the matter. The appointment of an unlimited number of justices specially learned in lunacy will not necessarily remedy the evils that occur in such cases as that of Narcisse Warren, for it is too often found that special justices will not sign the order unless the individual in question goes through certain acts that in the special justice's opinion are insane acts. These justices do not know, or they will not believe, that it very frequently happens that the most dangerous lunatics are those who are least demonstratively insane in their behaviour. The occurrence of such a case as that of Narcisse Warren is a grave blot upon our lunacy system.

MEDICAL EDUCATION IN BELGIUM.

THE *Scalpel* is endeavouring to impress upon the more highly gifted of the young Belgian medical graduates the desirability of their forming, as they have the right to do, extra classes for the instruction of students and legally, but not practically, qualified men; also for older practitioners who wish to keep abreast of the latest developments of science. The example of Germany is quoted, where it is admitted that the course of study is much better than in Belgium, no one being allowed to practise without having undergone a "very severe" State examination, but where, notwithstanding, numbers of *privat-docenten* open courses on almost every conceivable subject, to which students and practitioners flock in order to qualify themselves still better for practice. The same kind of system obtains in Paris, where the *agrégés* hold numerous and well-attended classes. In Belgium, however, "owing to the competition in higher education, our Universities, in order to attract students, have only to show themselves more lenient and less severe than their rivals, and they will surpass all others in their students' roll."

THE HEALTH OF THE NORTH RIDING.

THE County Council for the North Riding of Yorkshire some time since appointed Dr. J. W. Taylor as their medical officer of health, and he has commenced his duties by basing a general report on the detailed reports of local health officers. The death-rate for the county last year was 14·7 per 1000, as opposed to 17·9 for England; and the zymotic rate was 1·4, as opposed to 2·1 for England. In dealing with the means of staying preventable disease, Dr. Taylor points out how generally scarlatina prevails in the county, and he urges that the first stages in its prevention must be universality of compulsory notification, easily available public means of isolation, early communication between health and school officials, and efficient means of disinfection. Other points are adverted to in the report. If Dr. Taylor can secure for the North Riding generally action on the lines he has thus indicated, he will have done much towards the abatement of preventable disease in the area now under his supervision. Incidentally, it is suggested that there should be uniformity in recording sickness returns under the Notification Act. Before the passing of that Act a form supplied by the Local Government Board was in general use for sickness returns, but the material with which to properly fill it in was not available, and it largely fell into disuse. That Board will, we may assume, modify their form to meet the altered circumstances, and its issue for the purposes of future health reports will tend to secure the uniformity desired.

FLOATING AMBULANCE SERVICE ON RIVERS.

DR. F. SANTINI, of the Italian naval medical service, in conjunction with Signor di F. Home-Rosenberg, an officer in the army, have published in the October number of the *Rivista Marittima* an interesting paper detailing a scheme for the organisation of a river ambulance service, which they think might well be organised by the Red Cross Society, so as to be most valuable in case of war. The authors remark upon the successful manner in which water-borne ambulances were employed during the British campaign in Egypt in 1882, and point out how peculiarly such a system is adapted for the needs of a country like Italy, where there are such numbers of rivers, lakes, and canals. They also call attention to the greater comfort and freedom from jolting and dust which can be enjoyed by the wounded on board boats than when they are conveyed in railway ambulance trains. The proposal consists in a plan of registering existing boats, and transforming them when possible into suitable ambulances. The tonnage should not be less than 200. They would be placed in three categories. 1. Boats accommodating two surgeons and four assistants, also hospital orderlies, cooks, bearers, and 200 wounded. 2. Boats containing wounded only, but furnished with washing and disinfecting apparatus. 3. Boats suitable for administrative purposes—that is to say, forming the nucleus of an ambulance train, accommodating seven surgeons, a pharmacist, a number of orderlies, cooks, and bearers, and furnished with stores of all sorts and with washing and disinfecting apparatus. Plans are given showing the arrangement suggested for each of these classes.

SCLERODERMA AND ITS TREATMENT.

DR. A. LLOPIS reports and figures in *El Siglo Médico* a case of scleroderma occurring in a woman of forty-five years of age and affecting both mammæ, which were of stony hardness and atrophied on the surface, with the exception of the nipple being covered with large dark scales—psoriasis nigricans. The patient complained greatly of constriction of the chest, which prevented her breathing easily. The left arm was also affected. Before being seen by Dr. Llopis, three skilful practitioners had at different times diagnosed cancer and had advised operative measures. Dr. Llopis diagnosed scleroderma adultorum, and ordered a nutritive diet, arsenic internally, an alkaline wash, frictions of cod-liver oil for the psoriasis, and soothing ointment to be applied to the nipple, which was raw and painful. After about ten days of this treatment there was some improvement to the touch and also some diminution of the difficulty of breathing. The amelioration was, however, only temporary. The

arsenic was discontinued, and mercurial inunctions, combined with aromatic vapour baths, ordered, which were continued until constitutional symptoms began to present themselves. This treatment, again, was followed by general improvement, and Dr. Llopis proposes after a time to recommence the mercurial inunctions.

HOSPITALS FOR EPIDEMICS AT MADRID.

A REPORT has been made to the Spanish Council of Health on the question of hospitals for epidemics by the committee which were some time ago appointed to inquire into it. They recommend that two pieces of land in different quarters of Madrid should be obtained, and that upon these two hospitals should be erected, each containing 400 beds, on the pavilion system; also that a collection of materials required during epidemics should be stored at a central depôt in Madrid, so that on receipt of a telegram from any town or district in Spain a supply of iron and wooden buildings, bed linen, disinfectants, and all other things likely to be needed could be despatched immediately. This looks very well—on paper; but how often are reports on sanitary matters in Spain allowed to bear any fruit? Let us hope that the Government will have received an incentive by the recent cholera and small-pox epidemics, and that this and other sanitary recommendations will not be pigeon-holed for an indefinite period.

THE HOUSING OF THE POOR.

A MEETING of delegates from the several London sanitary authorities and of members of the London County Council was held last week at the offices of the Council in Spring Gardens, to discuss the Housing of the Working Classes Act of this year. The meeting was presided over by Lord Compton, who stated that the object of the conference was that some agreement might be come to as to the working of the Act. The most important resolutions submitted to the meeting were moved by Mr. H. C. Saunders, of the Kensington Vestry, and were to the following effect:—

"(1) That, in the opinion of this Conference, it is desirable that some common understanding should be arrived at between the County Council and the vestries and district boards in the metropolis as to the condition or defects which would render a house, either permanently or temporarily, so dangerous or injurious to health as to be unfit for human habitation within the meaning of the Housing of the Working Classes Act, 1890; (2) that with a view to arriving at such common understanding the medical officer of health to the London County Council be requested to convene a meeting of the medical officers of health of the vestries and district boards of the metropolis, in order that they may report generally on the subject to a subsequent meeting of this Conference, and, if practicable, submit for consideration a list or schedule of the conditions and defects which may be considered to render a house so dangerous or injurious to health as to be unfit for human habitation; (3) that this Conference desires to call attention to an apparent defect in the Housing of the Working Classes Act, 1890, in that whilst the London County Council may, in the case of a scheme carried out under Part II. of the Act, require that the expenses, or a contribution in respect of them, shall be borne by the district particularly benefited instead of by the county fund, there appears to be no similar provision in the Act empowering the Council to order any special contribution to be paid by any vestry or district board in respect of expenses incurred in carrying out a scheme under Part I. of the Act."

Of these the first and second were carried, and the medical officers of health are therefore left with a task before them which is not easily performed. Indeed, it is not very obvious to understand what is intended. There is no difficulty in stating that houses wanting in ventilation or light or in opportunities for cleanliness are unfit for habitation, and may be reasonably condemned on health grounds; but it is impossible to lay down any hard-and-fast line which should serve as a standard by which houses may be condemned, and it is necessary for every officer to exercise his judgment in each particular case, and decide as to the fitness of a house for occupation in view of its general condition. The subsequent proposal to associate the surveyors with the medical officers gives some clue to the thoughts of the meeting, and shows how completely the whole subject was misconceived. The surveyor would be properly employed in showing how in any particular house dampness might be removed or ventilation or lighting improved; but he is not the proper officer to express any opinion as to the effect of these conditions on health. A curious point in the resolution is the implication that medical officers have not been employed before in the performance of this duty. As a matter of fact, they have been thus engaged for nearly half a century, and the improvement in the sanitary condition of the country is largely due to the exercise of their judgment in the discharge of this duty. We do not doubt that they will be able to explain these circumstances to the meeting when it again assembles to receive their report.

FELLOWS OF THE COLLEGE OF SURGEONS.

A MEETING of the Association of Fellows of the College of Surgeons will be held at 4 P.M. on Dec. 20th, at 20, Hanover-square, W., to consider the negotiations between the Council of the College and the University of London, and other matters of importance to the Fellows generally. All Fellows of the College are invited to attend.

ARCANA FAIRFAXIANA.

OUR Newcastle correspondent made reference last week to this interesting book. We may here add a word or two to his account of it. The reproduction in facsimile has been admirably carried out, and the difficulty of reading some portions will probably prove an additional attraction to the genuine bookworm. A lucid introduction by Mr. George Weddell gives the story of the book, an account of the Fairfax family, and several specimens of handwriting with transcriptions. Although the "Fairfax" receipts deal in charms, they exhibit a number of remedies in which diet and *régime* are the chief factors. They represent domestic rather than professional medicine; but as they are culled from various sources they indicate, in a highly interesting and entertaining fashion, many of the gradual changes in the evolution of scientific treatment. The book will form an admirable gift to medical men.

BURIAL AND CREMATION.

MANY persons who regard cremation with no special enthusiasm will be ready to avail themselves of the argument by which Dr. W. Parker of Richmond, Virginia, seeks to establish the superiority of burial in disposing of the dead. The view advanced by him, without pretending to discuss the question deeply on scientific grounds, expresses very fairly certain religious and humanitarian reasons for preferring the last-named method. Burial, it maintains, is the more natural procedure. As such it offends personal sentiment less than cremation, it harmonises with that respect for the dead which distinguishes civilised communities, it offers no facility or inducement for disturbance of the dead, it invests the grave with a certain inspiration as of actual presence, and, if rightly carried out, need not be either expensive or insanitary. Moreover, it has the sanction of primeval example and of religious usage, whether Jewish or Christian. All this is indeed true enough of burial when carried out in the simplest manner and without the intervention of cumbrous coffins or funereal vaults. It

must be remembered, however, that the advantages of this primitive arrangement, manifest though they are, have not yet been generally recognised in practice. Until they are, and until cemeteries have come to be laid out and regulated in other countries besides America, with equal regard for health and appearance and disregard for the space appropriated by them, cremation as a sanitary measure must, on the whole, claim precedence over the older method.

THE COUNTY PALATINE OF LANCASTER.

AN excellent summary report on the County Palatine of Lancaster is given by the county health officer, Mr. Sergeant. It deals, amongst other things, with the varying salaries and varying duties required of the local health officers, and it thus brings to light some glaring instances of salaries which can only mean that the authorities giving them either know nothing or care nothing as to the true interests of maintaining a high standard of public health. It next deals with the vital statistics for the year, and with the prevalence of certain specified diseases; and, having regard to the need for early isolation of first attacks of infectious diseases, the question is raised as to the expediency of delegating to county authorities the duty of providing hospitals for conjoint districts. But a specially interesting part of the report deals with the pollution of the rivers within the county, and especially of the Mersey and the Ribble; indeed, so important a question is here involved that the aid of the Local Government Board is likely shortly to be invoked, with a view of deciding how the great difficulties attending the existing state of these rivers can best be met. Trade pollution probably offers the most pressing obstacles to improvement. But the difficulties involved must not be regarded as insuperable, and we cannot altogether abandon the hope that, in the end, it will be found not only practicable but also remunerative for manufacturers to deal otherwise with the chemical and other refuse of their factories than merely to cast them into rivers, by which they are passed on to towns below, and at the same time turn the streams into open sewers of the worst and most offensive character.

NEALE'S "MEDICAL DIGEST."

IT may be well that those of our readers who are interested in this valuable work should be informed that the publishers have decided to go to press on Jan. 2nd, 1891, which will necessitate on the part of those who wish to secure a subscription copy of this work of reference the sending of their names to Dr. Neale's address at 60, Boundary-road, South Hampstead, N.W.

FOREIGN UNIVERSITY INTELLIGENCE.

Breslau.—Dr. Schweter has been promoted to the rank of Extraordinary Professor.

Buda-Pest.—Dr. Feuer has been recognised as *privat-docent* in Ophthalmology.

Clausenburg.—Dr. J. Löte has been appointed Extraordinary Professor of General Pathology.

Graz.—Dr. Habermann of Prague has been appointed Extraordinary Professor of Otology.

Heidelberg.—Professor Kraepelin of Dorpat has been offered the Chair of Mental Psychology.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.

THE deaths of the following distinguished members of the medical profession abroad have been announced:—Dr. Carl Weigert, Professor in the Pathological Department of the Senckenberg Institute, from blood poisoning.—Dr. Friederich Salzer, Extraordinary Professor of Surgery and *Primararzt* in the General Hospital, Vienna.—Dr. W. Ettlinger, Physician-Accoucheur to the Russian Imperial family, who, amongst other medals and orders, had the Crimean medal.

WE learn that a short course of post-graduate lectures and demonstrations on the Pathology of Tubercle will be given at Queen's College, Birmingham, in January next, by the professor of pathology, Dr. Barling, and the lecturer on practical pathology, Dr. Crooke. The lectures will treat of the life history of the tubercle bacillus and the modes of infection, and the special lesions found in the respiratory, alimentary, cerebro-spinal, and genito-urinary systems; and in bone, joints, lymphatic glands, and skin. Communications should be addressed to Mr. E. B. Lawley, Queen's College, Birmingham.

PISA has been heavily visited by an epidemic of typhoid fever. On the 3rd inst. as many as eighty cases were reported. The disease assumes a peculiarly malignant form, running rapidly into "polmonite infettiva" (infectious pneumonia). The physicians, worn out by their attendance on the sufferers, have had to be reinforced by twenty-six students of the sixth year. The city seems depopulated (spopolata), but there is no panic. The Board of Health has taken active measures to limit the area of the disease, and already a sensible diminution in the number of cases is announced.

THE members of the Leprosy Commission have arrived at Bombay, and have been welcomed with marked demonstrations of approval and good feeling. The Commission, it will be remembered, consists of Dr. G. A. Buckmaster, Mr. A. Kanthack, and Dr. Beaven Rake, of the Leper Asylum, Trinidad.

DR. JAMES THORBURN, who for many years so ably filled the position of Professor of Materia Medica and Therapeutics in the Toronto School of Medicine and more recently filled the Chair of Pharmacology and Therapeutics in the University of Toronto, has resigned the position, being made Emeritus Professor in the medical faculty.

VICTORIA COLLEGE, Cobourg, a denominational institution, which for some years has exercised university powers, has decided, by vote of the Regents and Senate, to confederate with the University of Toronto, transferring its seat to this city, thereby securing to its undergraduates the many advantages offered by the provincial university.

AS will be seen by an announcement in our advertising columns, Fellows, Members, Licentiates, and Diplomates of the Royal College of Physicians of Ireland can now have their qualifications altered in the Medical Register in accordance with the change recently effected in the title of the College.

AMONG the new senators of the kingdom of Italy appears the name of Giulio Bizzozero, ordinary professor of general pathology in the University of Turin, and well known in European schools for his researches on the composition of the blood in health and disease.

THE Emperor has conferred the Order of the Red Eagle of the Fourth Class upon Dr. Cornet, assistant to Professor Koch, and Dr. Libbertz has received the title of Councillor of Public Health.

AT the meeting of the Medical Society of London on Monday next Sir Andrew Clark is to read a paper entitled "Observations on the Convulsive Cough of Puberty."

AT a special meeting of the Leeds County Council a motion by Alderman Ward that the Council should adopt the Infectious Diseases Notification Act, 1889, was met by an amendment that the question be referred to the Sanitary Committee for reconsideration, and this was ultimately carried by a large majority.

AT the meeting of the Clinical Society to be held this evening (Friday, Dec. 12th) a case of lupus of the mouth and face, treated at Berlin by Koch's method, will be shown at 8 P.M. by Dr. Pringle and Mr. Malcolm Morris.

PROFESSOR KOCH'S TREATMENT OF TUBERCULOSIS.

(FROM OUR SPECIAL COMMISSIONER.)

THOSE who have made themselves acquainted with the progress of the question relating to Koch's remedy will not expect that any very novel or extraordinary results are to be reported to-day. Only thoughtlessness and want of consideration could suggest the questions continually asked: "How many cases of cure can be reported?" &c. The position taken up by THE LANCET in this matter is the only one which can be defended, or which has any reasonable grounds of defence. It is undeniable that Koch has ever been a most reliable and honourable investigator. His works are there for the world to study and examine. No more strictly scientific works exist. In the history of science it would be difficult to find any work of so stupendous magnitude in proportion to the comparatively insignificant bulk. His first work on "Infective Diseases of Wounds" ("Wundinfektions krankheiten") is a mere pamphlet, and all his published works together would only make a moderate sized octavo volume. When their quality, apart from their quantity, is considered, one is astounded to find that a few words or a few lines from one man can set the world in a tremor. Such has been the thorough and complete character of his work so far that whenever he does make statements they are regarded as being serious and trustworthy. On such grounds alone is to be accounted for the fact that the medical world has been contented blindly to accept and make trial of a secret remedy merely because Koch's name is attached to it. There is, therefore, good reason for the position taken up by THE LANCET, to receive the announcement that Koch's remedy is a cure for tuberculosis as a thoroughly honest and honourable announcement from him, but one which calls for thorough and serious clinical examination. Koch asks for nothing more. He has in fact adopted the plan of keeping the nature of the remedy secret, entirely with a view to securing that these tests should be thorough and should only be made by reliable persons. He has not indeed himself originated the idea of keeping the nature of the remedy secret, but he approved of it. Had the nature and mode of preparation of the liquid been made known the result would have been that any unscrupulous person might claim that he had stuff prepared according to Koch's method, and that he was ready to use it, and indeed that he even had already cured hundreds of persons by its use. Some others would assume that their superior knowledge and experience and their superior commercial advantages enabled them "to produce a very superior article at less than half the price." Indeed, a little consideration will show that the preservation of the secret has been not only excusable, but necessary. Now everyone knows that the liquid can only be got from Koch, and of course there is a register kept of the persons to whom the liquid has been given. These are persons of repute and skill and clinical experience. Their reports as to the results of treatment with the liquid will form the scientific basis on which the future application of the remedy will rest. In default of complete results as to the treatment of human patients by the liquid from the hands of Koch himself, which would have been the most satisfactory thing, we must now look to the results of treatment by various men, under every variety of circumstance. The history of the course of investigation has been broken. It is to be hoped that the various streams down which the knowledge of this most important subject will flow will all be united in one broad river of pure science, fraught with life and healing to the many victims of tuberculosis.

The progress of the cases of phthisis under treatment here may not be a source of such sensational information as that furnished by early cases of lupus, but it is one of still greater interest than lupus, and one which is probably of paramount interest to medical readers in England. It may, therefore, be excusable to devote the greater part of this letter to this form of tuberculosis and the progress hitherto made by the cases treated by Koch's method. With regard to the general result obtained by the use of the liquid, it is safe to say that increased experience brings many new features to light, showing that the question is still quite in the experimental stage.

It is gratifying to be able to report that two cases of phthisis were discharged from the Charité Hospital on Monday week last. They had been under the care of Professor Fraentzel there, one since Oct. 3rd, the other since Oct. 7th. Professor Fraentzel is the last person to suggest that the cases are absolutely and permanently cured. Indeed, he has plainly stated that in his opinion such a result would be in the time absolutely impossible for serious cases, and even for cases in the first stage it is not attainable. These two cases probably offer as favourable results as will be attained by the use of Koch's liquid under existing circumstances. In such favourable cases the patients cease to show bacilli in their sputum from time to time, but it must not be expected that the disappearance of bacilli on a certain day means certain cure. On the contrary, experience shows that they may reappear, and even in increased numbers, from time to time. And it is not improbable that this increased number in the sputum is one part of the process of cure, whereby the bacilli are expelled and necrosed tissue is broken down and expectorated. Not only have these discharged cases ceased to show bacilli, but the night-sweats have disappeared. The cough, which at first increased under the treatment, has also almost left them; the expectoration is quite changed in appearance, and has also greatly diminished in quantity; the patients' weight has increased, and they say they feel strong and well, and the miserable, cachetic appearance which they presented two months ago is altered for a perfectly healthy aspect. With regard to the patient who came under treatment on Oct. 3rd he had well-marked respiratory sounds, indicating phthisis, when taken under treatment. When discharged, it is stated by Professor Fraentzel that he had no dulness on percussion anywhere, and that everywhere there was pure vesicular breathing, except above the left clavicle, where on deep respiration some abnormal respiratory murmurs were still audible. On four days shortly before his discharge his sputum was free from bacilli, but from time to time these returned after temporary absence.

The second of these favourable cases discharged by Professor Fraentzel came under treatment a few days later than the other—viz., Oct 7th. He had marked dulness and characteristic sounds in the apices of both lungs, when his treatment began. At the time of his discharge no dulness was detectable, and the abnormal sounds had also disappeared. Only very few bacilli could be detected in the sputum at the time of his discharge, and the temperature of both this and the former patient was normal.

The favourable progress made by these cases is undeniable, and is not such as depends on the emotional state of the patient. Time alone can decide whether the ground gained will be permanently retained. The patients at the time of their discharge promised to return every fortnight to hospital for the purpose of receiving a fresh inoculation to show whether they have recovered the susceptibility to the liquid, as both had ceased to react to injections for some time. It is Professor Fraentzel's intention in future to treat slight cases of phthisis in hospital for a couple of months, and then if they progress favourably to send them home,

like these two, and subsequently to test their condition by renewed inoculations; microscopic examination of sputum, &c. As stated in a previous communication in your columns the bacilli found in the sputum, although greatly reduced in numbers, and for a time absent, still retain their virulence when inoculated in guinea pigs. Further, it is to be borne in mind that the expectoration in general increases after the treatment has commenced, and that the increased number of bacilli observable in the sputum from time to time is not to be taken as a bad sign.

With regard to the quantity of the liquid to be injected several medical men of experience have expressed the opinion that it would be much wiser to give smaller doses than are commonly given in the Clinical Hospital here, especially in the surgical wards, and to adopt Koch's own suggestion to begin as a rule with 0·001 cc. Professor Ziemssen has expressed that opinion emphatically after his return to Munich from a visit of inspection here, and Professor Goldhammer has expressed to me strongly the same view. The occurrence of a serious case of violent laryngeal reaction at Bonn, necessitating tracheotomy, is a sufficient warning, if one were necessary after the similar case which occurred here, of the need of caution in using only small quantities of the liquid. In many cases of laryngeal tuberculosis swelling of the soft parts already exists, and the injection of Koch's liquid almost invariably leads to increase of the swelling. As the reaction, both general and local, is largely dependent on the dose, only very small doses should be used where great and urgent risk may arise within a very short time. The dose suggested by Koch himself of 0·001 cc., or even less, may be taken as a sufficient and safe one to begin with. In one case in which vesical coexisted with pulmonary tuberculosis very severe local reaction occurred in the bladder.

The Case of Dr. Levy.

The amount of attention which has been devoted in the daily papers to an alleged attempt by Dr. Levy to charge an excessive fee has been such that it cannot be passed over altogether in silence in your columns. Dr. William Levy is a talented surgeon of this city, and his standing may be judged from the fact that Koch selected him as the person in coöperation with whom to carry out his earliest experiments on men with his liquid. These experiments were carried on in Dr. Levy's private hospital. In this establishment Dr. Levy has therefore had cases under treatment for a longer time than other medical men in Berlin. His courtesy, and the care he has taken to give as much information as possible to the innumerable medical men who have visited his clinic, have been fully recognised by visitors here. According to the papers, Dr. Levy asked in one case 300 marks (or £15) per injection with Koch's liquid, or, as another paper says, 500 marks (£25). Several letters have appeared in the papers stating that Dr. Levy had been a loser and not a gainer by his treatment of patients with Koch's liquid. To-day I had an opportunity of speaking with him on the subject. He observed that it was his friends who had done him harm by showing injudicious zeal in his defence, and that his enemies could not possibly injure him. He added that he had referred the whole matter at issue to the District Council of Honour (Ehrenrath), and was perfectly satisfied to leave it in their hands. The city is divided into nine districts, and each has a branch council before which any member can bring a question of medical ethics. Should a decision of a district council for any reason prove unsatisfactory, the question at issue may be laid before the General Council representing the whole of the districts. In his speech in the Chamber of Representatives a few nights ago, Minister von Gossler referred to this matter, and quoted Koch's opinion of Dr. Levy as being a most talented, hard-working, and self-sacrificing man.

Precautionary Measures.

In a recent number of THE LANCET I drew attention to the serious danger to the public health of this city likely to arise from the sudden invasion of patients suffering from every form of tuberculosis and coming from all the corners of the earth. At last the public authorities here have awakened to the existence of the danger, and steps are to be taken immediately to minimise it. The most serious aspect of this question does not arise from the crowds which come urging their claims for admission into the hospital or private clinics. Although some of the latter institutions are not perhaps everything which one could desire in the sanitary way, still they are all under medical supervision, and we may assume that every precaution is taken to obviate danger from the spread of the most deadly of all diseases. It is the reckless (Minister von Gossler himself called it so) admission of patients into hotels and lodging-houses which is the most objectionable and dangerous proceeding. Many lodging-houses utterly unprovided with suitable arrangements have taken advantage of the many infected visitors to turn their houses into sick wards. Visitors in hotels here have made similar complaints. Feelings of the deepest sympathy for the patient offer no justification for putting other visitors in the position of being unwilling companions of his and possibly his fellow sufferers. However, since the attention of your readers was directed to this question—and it is one which must force itself on all as one of the greatest practical importance—it has come not only before the medical college here, but also before the Police Department and the Public Health Deputation of the Magistrates. A special meeting of the Board of Magistrates was held on Saturday to consider the question as one of great urgency. It has been decided to extend the regulations as to disinfection to all who reside in places which partake of a public character, such as hotels, furnished lodgings, &c. The notices on this subject have not yet been published, but will be immediately.

This is very gratifying to persons who are obliged to live in hotels, and there are no few of these just now belonging to the medical profession. But decidedly there is a marked diminution in the number of foreign and German doctors visiting the various public and private clinics and hospitals here. But though this was to be expected, as a necessary reaction against the unexampled rush to Berlin which prevailed during the past few weeks, there is no sign of diminution of serious determination on the part of the authorities here to encourage Koch in every way to carry his researches as to the prevention and treatment of infectious diseases to a victorious issue. Already no less than 145 of the 150 beds are ready which were to be provided for patients to be treated by and under his instructions. The supply of the liquid, too, has been extended. It is now being used in Berlin in a large number of hospitals, including both the medical and the surgical departments of the Charité; in the Surgical Hospital and Polyclinic of the University, in the Moabit Hospital, the Friederichshain, Urlan, Bethanei, Augusta, and Jewish Hospitals, as well as in the private clinics of Drs. B. Fraenkel, Gütterbock, Krause, Lassar, and Levy. When we consider the number of cases of tubercular disease under treatment here, and in the considerable number of places where Koch's liquid is being used in other parts of Germany and abroad, it is clear that there must soon be a large amount of valuable information available by which to judge of the efficacy of the treatment. Everyone will look forward with keen interest to the statistics which are to be furnished, in accordance with a circular issued by Minister von Gossler, by the directorates as to all cases treated by Koch's method in University Polyclinics, up to Jan. 1st, 1891. These results will probably be published in the "Clinical Year Book," which will appear about Easter, 1891.

The daily papers contain, as might be expected, reports of death among patients treated for tuberculosis by Koch's method. Such persons are not, unfortunately, endowed with immortality because they happen to have received an injection with Koch's liquid. So far no announcement has appeared, made on good authority, of any death in consequence of the use of Koch's liquid. But facts show most undoubtedly that the properties of the liquid are such as absolutely to preclude its use as an ordinary therapeutical agent in general practice. As much has been intimated already in these columns, and several experienced persons have expressed strong opinions in the same sense. The authorities at Vienna have gone so far as to prohibit the general use of the remedy in hotels and other unsuitable places, and insist that the patients must be treated only in suitable institutions. Von Ziemssen, than whom there is no greater authority, has urged the same thing. It is better that the eyes of general practitioners and of the public should be at once opened, so as to see the facts as they are, and they

will be less disappointed than if they learned the truth later. All persons do not react in exactly the same way to the liquid even when suffering from the same form of tuberculosis, and in persons suffering, for example, from laryngeal and pulmonary tuberculosis the reaction exhibits markedly different features. The soft parts of the larynx are very liable to become rapidly infiltrated and œdematous, and this has become so extreme in some cases that tracheotomy has been unavoidably resorted to. Such a thing occurring in a properly organised hospital is always sufficiently serious. But a moment's reflection will show what might be the result in a country district where a case of laryngeal tuberculosis was being treated according to Koch's method, by a practitioner living from three to five miles away from his patient, and with no medical assistance within many miles. In pulmonary cases the local reaction shows itself mainly in connexion with the lungs, sometimes accompanied by difficulty of breathing, feelings of great depression, high fever, &c. The symptoms may be such as to cause great alarm to the patient, and undoubtedly the medical attendant would need to be at hand. But, further, the selection of cases fit to be treated can only be made, with any hope of success and of avoiding serious danger, by medical men who have studied the question. There are cases in which it would be little short of criminal to commence treatment with injections of Koch's liquid.

These remarks are not made with any view to dishearten either patients or practitioners who are anticipating great advantages from Koch's discovery. They are, on the contrary, made in order to prevent the emotional reaction and disappointment which must ensue if the idea were allowed to prevail that shortly every practitioner will have his supply of the liquid, and that it will be as generally and easily employed as Epsom salts. That idea must be dismissed. The liquid is a most powerful toxic agent, and must only be used by skilled hands. Some idea of its activity may be gained from the fact of the inconceivably small quantity of the active part of it which is administered in an ordinary injection. I have it on the best authority that Koch estimates that about one-thousandth part of the liquid is active, the nine hundred and nine-nine being only menstruum. The average dose contains one milligramme of the liquid, therefore the amount of the active agent does not amount to more than the one-thousandth part of a milligramme, or about the fifteenth-thousandth part of a grain! This minute quantity is sufficient to affect the whole body, producing a temperature which may reach 106° F., and cause violent local reaction. When we consider the bulk of the human body into which this inconceivably small particle of matter—dead chemical matter, not living organism—is injected, and the result, we can feebly realise its tremendous activity. That such extreme care must be exercised in measuring the dose so as not to give more than the thousandth part of a milligramme of this powerful material is another reason for believing the fluid will hardly be available for general practice. It is to be hoped, however, that every district will be so fortunate as to have a centre where under proper supervision the liquid may be employed by an experienced medical man. In this way the greatest good will be secured to the greatest number. As there seems reason to hope that the mode of preparing the liquid may be accelerated and the quantity also increased, it is most desirable that hospital and public authorities should take timely counsel as to how best to take advantage of the supply of liquid should it be obtainable. Our Poor-law authorities especially should consider the subject.

The more numerous the observations as to the effects of the liquid the more multifarious are the results attributed to it. Professor Billroth, in Vienna, reports a case of tubercular disease which showed no reaction after inoculation; and Professor Krause of Berlin, the laryngologist, has a similar case under his care. He was good enough to give me some details of this case which are of interest. The patient is a powerful, big man, who came under Professor Krause's care about eighteen months ago with laryngeal symptoms which led him to suppose it was carcinoma. It was determined to perform partial excision of the larynx, but before doing so a portion of the morbid tissue was removed by the curette and carefully examined. Distinct tubercles were found in the parts removed, as well as cheesy matter and giant cells. The case was therefore diagnosed to be one of tuberculosis of the larynx, and it was treated with lactic acid, and the ulcerations quickly healed. There were fresh outbreaks of ulceration from time to time, but they yielded to treatment; and this fact served to confirm the diagnosis of tuberculosis. It may be taken also as favouring the diagnosis that during the past year and a half neither carcinoma nor syphilis, the only diseases with which the case could be confounded, has declared itself. This patient has no pulmonary affection, and, except for his laryngeal trouble, has enjoyed excellent health. Within one week he has received five injections of the following quantities (in milligrammes) of Koch's liquid: 0·002, 0·003, 0·008, 0·01, 0·02. The last two doses, it will be seen, are respectively five times and ten times as large as the first. Tubercle bacilli have not been found in this case, and were not looked for at first. Professor Krause suggests as a possible explanation of the remarkable fact that no reaction has occurred in this case (1) that the disease is very limited in extent, and that whatever localised processes are set up by the reaction of the tubercular tissue are therefore of the smallest possible extent; or (2) that the tuberculosis is actually healed. But there may be individual idiosyncrasies with regard to reaction from this agent, as there are to small-pox, and inoculated vaccine, to mention only two familiar instances in man. Similar peculiarities exist among animals: as, for example, in the case of the Algerian sheep, which is not susceptible to anthrax (although the blood drawn from it is an excellent culture-medium); and the horse and dog, which, among domestic animals, show an exceptional power of resisting tuberculosis.

Fresh forms of complications or secondary phenomena arising from the injections continue to be reported. Dr. Lindner reports some cases in which herpes labialis occurred, and he also draws attention to the especial liability of children to the rigors, which are not of infrequent occurrence among adults. Vomiting has been known to occur in some cases after every injection. Diarrhœa is also liable to occur among children, of a severe kind, but only lasting a short time. There are a number of children in Professor von Bergmann's wards who have suffered from this complication. In Dr. Lindner's opinion this diarrhœa is of septic origin, and is due to the presence of some substance in Koch's liquid. The exanthematic rash, very like scarlatina in colour and distribution, may also be attributed to the same cause. I have convinced myself that after drawing the nail across the bright-red skin of a patient who has such a rash there is not left the characteristic white line found in cases of scarlatina. Albuminuria has also been noted, sometimes of a serious kind.

At last one person experienced in the employment of Koch's liquid has announced that he regards a case as definitely cured, and this no less important an authority than Professor von Bergmann. He gave an address on the 4th inst. to the army surgeons who have been summoned to Berlin to consult with the authorities as to the best steps to be taken to give soldiers the benefit of the discovery, and at this meeting he showed a case of lupus of the face which is so completely healed that even, although there is still slight *local* reaction in the parts formerly diseased, the Professor thinks himself justified in regarding the case as cured. But Dr. Pfühl, Koch's son-in-law, did not quite take the same view. All who have used the liquid cannot but speak highly of its great value, therapeutically and diagnostically, and this is especially true of the more experienced surgeons.

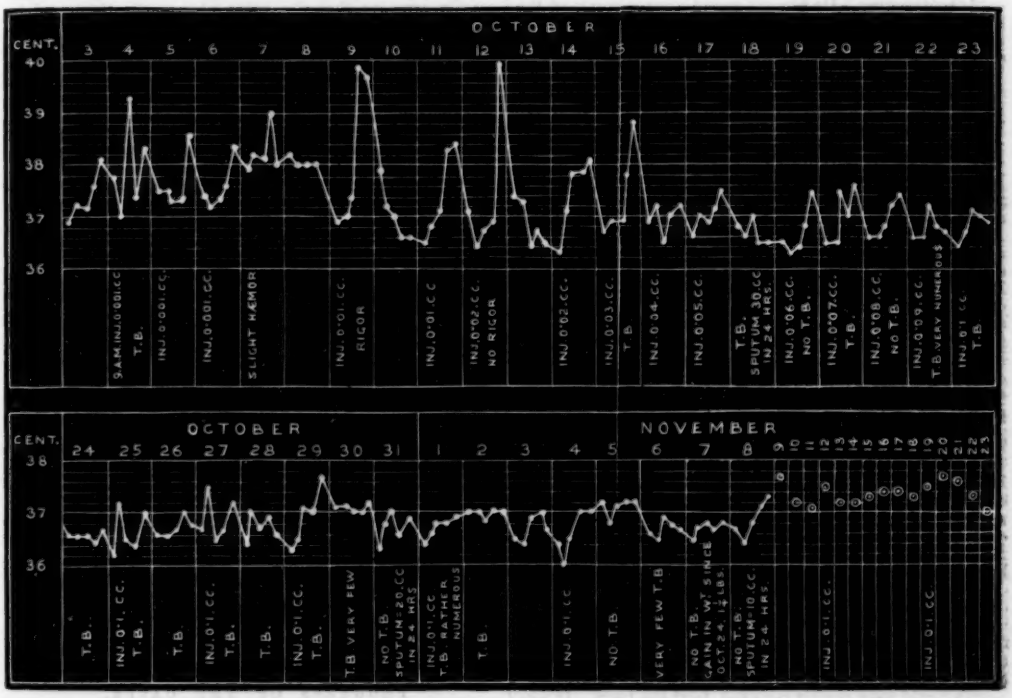
The Alleged Fatality from the Use of the Liquid.

On going to press we receive a further communication from our Special Commissioner, referring among other things to the death alleged to be due to the treatment by Koch's method. The necropsy, however, revealed no conditions but those commonly met with in advanced cases of phthisis complicated with peri-bronchitic inflammation and interstitial pneumonia, and gave no evidence that the fatality was directly due to the use of Koch's liquid.

The appended chart illustrates the course of temperature in one of the earliest cases of pulmonary tuberculosis treated by Koch's method. Some of the facts have already been published by Drs. Fraentzel and Runkwitz (see THE LANCET, Nov. 29th, p. 1185), and we owe to the latter the later record—viz, from Nov. 8th onwards. The maxima only are given of the temperatures from Nov. 9th to 23rd inclusive. Since then we have received records up to Nov. 27th, viz.:—

Nov. 24th	.. Max.	37·3° C. (99·2° F.)	..	No bacilli in sputa.
,, 25th	.. ,,	37·6° C. (99·8° F.)	..	Bacilli ,,
,, 26th	.. ,,	36·9° C. (98·4° F.)	..	Bacilli ,,
,, 27th	.. ,,	37·2° C. (99·0° F.)	..	—

The inoculations were made at 9.30 A.M on each occasion. It will be observed that they commenced with a dose of 0·001 grm., which at first produced considerable reaction (39·3° C., or nearly 103° F.) on Oct. 3rd. Next day the reaction was less, and again on the following day. The treatment was then suspended for two days, owing to slight hæmoptysis, and to 40° C. (104° F.). The dose of 0·02 grm. was repeated on the 14th with much less reaction; and from that date increasing doses, given daily, or every other day, or at longer intervals, still produced comparatively little effect on the temperature, the maximum quantity (0·1 grm.) being reached on Oct. 23rd. The chart also records from time to time the


OCTOBER
CENT.
3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23
40
39
38
37
36
S.A.M. INJ. 0·001 C.C. T.B.
INJ. 0·001 C.C.
INJ. 0·001 C.C.
SLIGHT HÆMOR
INJ. 0·01 C.C. RIGOR
INJ. 0·01 C.C.
INJ. 0·02 C.C. NO RIGOR
INJ. 0·02 C.C.
INJ. 0·03 C.C. T.B.
INJ. 0·04 C.C.
INJ. 0·05 C.C.
T.B. SPUTUM 30 C.C. IN 24 HRS.
INJ. 0·06 C.C. NO T.B.
INJ. 0·07 C.C. T.B.
INJ. 0·08 C.C. NO T.B.
INJ. 0·09 C.C. T.B. VERY NUMEROUS
INJ. 0·1 C.C. T.B.
CENT.
OCTOBER
NOVEMBER
24 25 26 27 28 29 30 31 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23
38
37
36
T.B.
INJ. 0·1 C.C. T.B.
T.B.
INJ. 0·1 C.C. T.B.
T.B.
INJ. 0·1 C.C. T.B.
T.B. VERY FEW
NO T.B. SPUTUM 20 C.C. IN 24 HRS.
INJ. 0·1 C.C. T.B. RATHER NUMEROUS
T.B.
INJ. 0·1 C.C.
NO T.B.
VERY FEW T.B.
NO T.B. GAIN IN WT. SINCE OCT. 24, 12 LBS.
NO T.B. SPUTUM 10 C.C. IN 24 HRS.
INJ. 0·1 C.C.
INJ. 0·1 C.C.

when resumed on Oct. 9th the dose was at once increased to 0·01 grm., which was followed by severe reaction (39·9° C., or nearly 104° F.), with rigor. After a day's interval the same dose had a much slighter effect, but twice the amount given on Oct. 12th caused a rise in temperature presence or absence of bacilli (T.B.) in the sputum, and it is noteworthy that, although sometimes absent, they have continued to be present up to the latest recorded dates. The hours at which the temperatures were taken were 7 A.M., 10 A.M., 1 P.M., 4 P.M., and 7 P.M.

DR. KOEHLER'S LECTURE ON KOCH'S METHOD.[1]

DR. KOEHLER, Surgeon to the Charité Hospital, Berlin, who has had large experience in the employment of Koch's liquid for the treatment of surgical cases of tubercular disease, delivered an address at a meeting of the German Public Health Society. The meeting was held at the Hygienic Institute (where Koch's laboratory is) at 7.30 P.M. on the 24th ult., and the large hall was crowded to the fullest extent. Dr. Kaldischer presided over the meeting. Professor Spinole opened with a few congratulatory remarks on the good fortune of the Society in securing the services of so distinguished a surgeon as Dr. Koehler to lecture, and alluded to the glorious light reflected on the German nation by the many discoveries of Koch, especially his last. It was proposed and carried by acclamation that Koch should be elected an honorary member of the Society.

Dr. Koehler then commenced his lecture. Patients had been brought from the Charité, and were exhibited to the audience. They were suffering from various forms of external tubercular and joint affections; some were inoculated before the meeting, others had been done at various dates previously. He would as a surgeon limit his remarks to his surgical experiences, and perhaps allow himself to suggest a few deductions from them which seem justified by his experience. But they should remember these deductions were his, and Koch was not to be held responsible for them. His lecture would deal with tuberculosis of the skin and joints, but not with pulmonary tuberculosis. He had been engaged in treating cases by Koch's method for over six weeks. He would have preferred to wait for a very much longer time before publishing any of his experiences—results he could hardly call them, except as temporary results, which time might show not to be permanent. But *necessitas leges non habet*, and the circumstances of the time rendered it almost necessary to make the medical profession acquainted with the progress of the cases treated by Koch's method. He would bring before the meeting for inspection some ten cases treated according to that method. He thought it well to bring to their notice some points in the technique of the practice, points which he had been taught by practical experience to be important. First, he would strongly advise that Koch's liquid should not be injected near to the site of local tubercular mischief, but under the skin of the back, near the margin of the scapula. By this procedure they would avoid a source of error, arising from modifications produced in the infected part by the injection itself. Further, he considered Koch's syringe by no means essential; indeed, it had the drawback of containing more fluid than was required for an injection. It was highly desirable that there should be some uniformity in the nomenclature employed in speaking of the method &c., and of inoculation. They should adopt some dilute standard of normal solution of the liquid or "lymph," if it may be so-

[1] Our thanks are due and heartily tendered to Dr. Koehler for his kindness in supplying our special correspondent with the report of his valuable lecture.—ED. L.

called, for regular practice, with which all other dilutions could be compared. He suggested that a 1 per cent. should be taken as the normal solution; that is, the mother liquid diluted to $\frac{1}{100}$. He thought, further, it would simplify matters greatly if they always spoke of such a volume of liquid injected, and did not, as was now common, sometimes speak of so many milligrammes, and sometimes of so many cubic centimetres. He himself would always speak of the quantity injected as so many cubic centimetres, and when he said, for example, he had injected 0·01, he would always mean 0·01 cubic centimetre of the dilute standard solution of $\frac{1}{100}$. The dilute normal solution was perfectly clear. It went without saying that the syringe, needle, &c., must be perfectly clean and aseptic. It should always be sterilised before use by washing in absolute alcohol. If a little of the alcohol remained in the syringe when the lymph was put in it, a slight opacity was produced in the lymph. After the injection there ensued (in tuberculous persons) a feeling of malaise, followed usually by rigors as the fever rose, and frequently accompanied by vomiting. At the point of inoculation there never was local reaction when there was tubercle there, but there was always general reaction, which had a marked character. But its duration was almost always such that at the end of twenty-four hours the reaction had mostly passed away. Among secondary phenomena arising from the inoculation he had seen cases of skin eruption[2] of different kinds. One remarkable case he would show, that of a child covered all over with a cutaneous hyperæmia, very like scarlet fever. [The child was exhibited, the upper part of its body being uncovered. Its skin was uniformly of a bright-red colour, not in patches, but when seen from a little distance was very like general scarlatinal eruption. In another case he had seen eruptions very like *Friesel*.] He had also seen yellow discolouration of the skin; he had seen icterus occur twice. He had also seen inflammation of the cornea and conjunctiva occur, and in one case the conjunctiva became red and inflamed after each injection. He had more experience in the treatment of lupus than of any other disease by Koch's method. It was of the utmost importance to distinguish cases in which the disease had only involved the most superficial tissues, and those in which deeper tissues were also attacked. The former offered much less difficulty in treatment than the latter. When the disease is superficial the tissues which have become necrosed under the action of the injection of Koch's liquid were readily removed from the body. It was different when the tuberculosis had attacked deeper structures. In such cases it was necessary to assist the action of Koch's liquid by surgical operation, and thus to remove the necrotic tubercular tissue, and along with it the living bacilli from the body. For this purpose the familiar "sharp spoon" was the most convenient instrument. It must not for a moment be imagined that the surgical treatment of tuberculosis could be entirely supplanted by Koch's method. The surgeon would now, as before, be obliged to operate on certain cases of tuberculosis. Undoubtedly his procedure would often be rendered easier and more successful now that Koch had provided them with a means of readily recognising the existence of tubercle when it would without its assistance have remained unsuspected, and also with a means of more sure demarcation of the diseased tissue. Resection of the joints would be also called for in certain cases, just as before Koch's discovery. These opinions he founded partly on experience, partly on theoretical conclusions from Koch's own statements. According to Koch's expressed opinion his liquid acted only on the living tubercular tissue, but not on the bacilli themselves. The bacilli remain in a state of activity, and capable of continued mischief in the body. What become of these bacilli? Several theories may be advanced on this subject.

1. We know that such necrosed tissue may become absorbed. That was a matter of everyday experience. But, as to the bacilli, we were justified in assuming: (*a*) That the bacilli might be absorbed along with the necrosed tissue. This could only be disastrous and lead to further localised or general tuberculosis. (*b*) They might remain *in loco*. As a result, after the absorption of the necrosed tissue in which they had been placed, the bacilli would find themselves placed in a fresh nutritive medium, and thus lead to a fresh local outbreak.

[2] Cf. Lecture of Professor von Bergmann in THE LANCET.

2. Another result may follow. The necrosed tissue may not be absorbed. Consequently (*a*) the living bacilli would find themselves in a medium unsuited for their nutrition, and they would probably die in the already necrosed tissue surrounding them; but (*b*) before this destruction of the bacilli could be effected accidental circumstances might intervene and prevent its being effected. One could readily conceive that the mass of necrotic tissue might be so affected by traumatic influence—e.g., a blow—that the resorption of the necrotic tissues might be greatly accelerated, and at the same time the bacilli would be set free, either to enter the circulation by absorption, or to set up a renewed tubercular process in the affected part. Even after cheesy degeneration had set in the same might result, and traumatic causes might lead to renewed activity in such a centre. From such considerations the lecturer was led to the conclusion that Koch's method was to be regarded only as one part of the medical treatment of tuberculosis, and that it must be employed in combination with surgical methods. This view, he believed, had not previously been expressed since the publication of Koch's discovery. He would draw attention to a very important observation made by him on a patient suffering from tuberculosis of one of the joints. An abscess formed in the affected joint, and when it was opened the necrotic tissue was discharged. Much information, it was hoped, might be learned from the careful and minute examination of the discharge as to the changes undergone by tubercular tissue which had been acted on by Koch's liquid.

Dr. Koehler summed up his views on Koch's method as follows: 1. It is quite certain that Koch's liquid enables tubercular deposits to be discovered in the earliest stage, and in cases where their existence had entirely escaped notice. 2. It is a sure means of differential diagnosis in cases where other complicating diseases occur, which present the same or similar appearances to those found in tuberculosis. 3. Even though the extreme benefits hoped for from Koch's method, especially by the general public, should not be derived, still its discovery must be regarded as one of the most important ever made in medicine.

DEMONSTRATIONS OF DR. KOCH'S TREATMENT IN LONDON.

PROGRESS OF THE CASES.

(*Continued from p. 1241.*)

City of London Hospital for Diseases of the Chest.

CASE 1.—G. M——, aged twenty-five. On Sunday the physical signs of this patient remained practically unchanged, except that at both apices the crepitation sounds became more numerous. On the 3rd the patient received a second injection of 0·002 cc., which produced on the following day a feeling of drowsiness, with flushing of the face. The eyelids were hot and stiff, and there was slight palpebral conjunctivitis, unaccompanied with any icteric change. The temperature rose to 101·8°, and reached its normal after twenty hours. Between the 4th and the 6th of December three injections of 0·002, 0·003, and 0·004 respectively were administered without producing any reaction or symptoms whatever. The general condition of the patient showed slight improvement. The breathing was freer, the cough less, the night sweats had practically disappeared, while the quantity of the sputum had increased and the bacilli were still numerous. On Sunday an injection (0·006) was administered, which produced the usual symptoms of a reaction, while on the following day the same dose failed to effect any change in the general symptoms. The sputum now shows more mucus than before the reaction.

CASE 2.—A. D——, aged forty, received further injections on the 4th and 5th, and on the 6th 0·004 cc. was introduced without producing any symptoms. In this case the patient, though feeling very weak from the effect of the fluid and from being fed on a milk diet, expresses himself as much improved. His breathing is much freer, and the sputum has increased from one ounce to two ounces and three-quarters. Bacilli could not be found. The next injection (0·005) failed to act; but the general condition of the patient on Wednesday morning showed less cough and considerable diminution in night sweats. Tubercle bacilli are again found in the sputum.

CASE 3.—B. W——, aged eighteen, received a third injec-

tion on Dec. 3rd of 0·005 cc., which produced no reaction and no symptoms. The sputum increased half an ounce in quantity, and it became decidedly more mucous in character. On the 4th 0·006 was administered without producing any reaction, and the sputum diminished slightly in quantity. In this case the physical signs of phthisis were very well marked, and they continue to remain so. This case has failed to react to the last two injections. He continues to sweat about the head and chest at nights, and the physical signs are practically unaltered.

CASE 4.—L. F——, aged twenty-one. This case of lupus continues to do well. The second injection (0·01 cc.) produced giddiness and frontal headache, and a rigor of seven minutes' duration some four hours after. Delirium supervened twelve hours after, and a papular, itchy eruption appeared about the same time on the limbs, chest, and back. The temperature reached its maximum (105·7°) in eight hours, reaching its normal five hours after that. As a result of the treatment, the skin over the lupus patches had become in some places smooth, and in others some flattened papules were seen. By Dec. 7th most of the crusts had fallen, and the patient was much improved. On Monday an injection of 0·006 was administered, and in six hours and a half produced a temperature of 104·6°. The usual symptoms characterised the reaction, and the rash reappeared.

CASE 5.—E. R——, aged twenty-six. This case of lupus in a strumous subject was injected by Dr. Heron on the morning preceding his demonstration. About twenty-four hours after the injection the patient complained of thirst and drowsiness, with severe frontal headache. The swelling of the various lupus areas increased very much. On Dec. 4th the redness still continued, and the lupus patches remained covered with crusts, which next day became somewhat looser, and in parts dropped off. They had not fallen off sufficiently on Sunday to enable an opinion to be formed of the amount of improvement, but in those places where they had done so the skin was smooth and healthy-looking. The temperature rose to 103·2° eleven hours after the injection, and did not begin to fall until thirty-five hours after injection. Since that time it has continued to fall, and reached the normal four days after the onset of defervescence. On Dec. 8th the injection of 0·01 cc. increased the temperature to 104·4°, and during the reaction the respirations became rapid.

CASE 6.—H. D——, aged fourteen. This case of phthisis, with long-standing hip-joint disease, received a fourth injection of 0·002 cc., an increase of 0·002 cc. over the previous dose. This practically brought about no reaction. After other doses a seventh injection of 0·01 was administered on Dec. 6th, which produced no effect on the patient. The physical signs remain unaltered, except that crepitations appear to have become more superficial and pleuritic in character. The bacilli have increased enormously in the sputa, which is taken as a mark of the curative influence of the injections. During the treatment no change whatever has appeared in the scar over the hip-joint. The result, indeed, does not show as yet any very marked improvement in the condition of the patient. A ninth injection was performed (0·012) on Dec. 8th, but produced no reaction. The symptoms of cough, expectoration, &c., are very slight now. The physical signs remain unaltered, and tubercle bacilli are abundant in the sputum.

CASE 7.—H. B——, aged twenty-eight, with a history and physical signs of phthisis, received a seventh injection (0·01) on Dec. 6th, and no reaction followed it. The tubercle bacilli were slightly increased at first. Since then they have been less numerous, but there has been no change in the character of the sputum or in the physical signs. The general condition of the patient shows no very marked improvement. On Dec. 8th an injection of 0·01 cc. produced no reaction. The general condition of the patient remains unchanged, and bacilli are abundant in the sputum.

CASE 8.—A. B——, aged eighteen, with no history of tubercle. The only symptoms were those of anæmia. The first injection was given on Nov. 23rd (0·01), and the temperature rose to a maximum of 101° in twenty-two hours after the injection, returning to its normal in forty hours. No headache or vomiting followed, but a slight pain arose in the left loin. It is a very rare thing indeed for a healthy person to have that rise of temperature. In view of possible error 0·005 was injected on Nov. 28th, and the temperature rose to 103·2° sixteen hours after the injection. The patient complained of headache and pain in the knee-joint. Some swelling and redness were found at the sides of the patella. This case showed the high diagnostic value of the fluid. On Dec. 2nd a third injection was administered (0·005), which brought the temperature up to 102·4°. A fourth injection was administered on the 6th, with only a very slight reaction. On Wednesday the patient felt quite well, and had no untoward symptoms.

King's College Hospital.

The cases demonstrated by Mr. Watson Cheyne in King's College Hospital on Wednesday, 3rd inst., generally speaking, may be taken to show typically the action of the fluid on tubercular disease.

CASE 1.—E. C——, aged sixteen, suffering from tubercular disease of the os calcis and of the third metacarpal phalangeal bone of the ring finger of the right hand, received a third injection on Wednesday, 10th inst. Reaction was produced, and high fever resulted from a dose of 0·015 cc. The redness produced around both wounds was not so intense as in the case of former reactions. The severity of the symptoms following the administration of the fluid diminished after each administration.

CASE 2.—H. F——, aged fifteen, has now received five times in succession the full dose, the temperature showing a diminution of the reaction on each occasion. In this case of lupus the patches on the arm and leg exhibited the characteristic action of the fluid on tubercular tissue. The edge of the lupus patch was not raised above the level of the skin. The case, so far as can be observed, is progressing as favourably as was anticipated.

CASE 3.—P. F——, aged thirty, inoculated for enlarged glands, masses of which extended from the angle of the jaw to a point behind the sterno-mastoid, and implicating both sides. On the first inoculation the temperature rose to 105·2°, remained up for eighteen hours, and then gradually began to descend. On subsequent occasions the temperature did not reach so high a point, did not remain up so long, and fell suddenly to normal. A rash appeared over the chest and back, and the glands became slightly but distinctly smaller after the first inoculation, and the margins became much more definite. The temperature in this case was extremely high, and the patient was very ill.

CASE 4.—W. R——, aged thirty-two, was inoculated with a full dose for strumous disease of the left knee-joint. After inoculation pain was complained of, more especially over the upper part of the inner head of the tibia, and the circumference of the joint was increased by one inch. A good deal of heat was present in the joint. The third inoculation (0·015) and the fourth (0·015) did not produce such marked symptoms. The pain in the knee continued, and also extended up the thigh and downwards into the leg. The patient is still under the treatment, and no definite changes are yet apparent in the joint.

CASE 5.—J. H——, inoculated for hip-joint disease. The temperature on inoculation of 0·003 rose to 104°F. The inoculation produced considerable pain in the joint, which continued with intermissions for four days. Towards midnight of the fourth day after the injection the pain abated somewhat, and was completely absent on the morning of the fifth day, when, however, the right eye became slightly congested and a few vesicles appeared on the cornea. On the second inoculation (0·003) the temperature rose to 105·3° F.; the pain in the hip reappeared and extended to the knee and the leg. In the evening the patient slept well, notwithstanding a slight troublesome cough. The temperature showed a peculiarity in this case, being higher on the second and third inoculations (105·3° F.) than it was on the first occasion. Apparently there is as yet no marked difference in the condition of the joint.

CASE 6.—M. G——, aged four, suffering from strumous disease of the left elbow-joint. A chronic abscess was apparent over the joint, and the synovial membrane was very much thickened. Extension and flexion were very limited indeed, and rotation scarcely existed. At present the treatment does not appear to have caused any marked difference in the condition of the limb, except that it is rendered more painful on manipulation.

CASE 7.—R. S——, aged twenty-six, was admitted for lupus of the nose, upper lip, and the upper part of the cheek. This patient received 0·008 cc. She became very sick after each inoculation. The usual course undergone by lupus patches was observed in this case. The patient seems to

be fairly well since the temperature has become normal, and the lupus presented rather more crustations and surrounding redness in subsequent injections than was the case at the beginning of the treatment.

CASE 8.—F. G——, aged three years, a case of strumous disease of the right elbow-joint, was inoculated with 0·002 cc. After each inoculation the patient has had a good deal of cough, which occurred as the temperature began to rise. This phenomenon has been observed frequently in young children about this age. The pain in the arm has been likewise markedly increased, but no definite local appearances have as yet been produced.

CASE 9.—C. K——, aged three, a case of strumous dactylitis of the ring finger, on being injected reacted well. No pain was elicited, but a continuous cough, similar to what occurred in the previous case, proved very troublesome as the temperature was rising. This child was very fretful and very poorly all through the treatment. The swelling of the finger subsides after each inoculation.

CASE 10.—M. C——, aged twenty-six. Has been inoculated four times for lupus of the face. The vesicles were very numerous, and the incrustations following were very extensive, the whole of the lupus patch being covered with them. The raised edge of the patch has become level with the surrounding skin, and this has been noted in all the lupus cases treated here. No tubercular nodules can now be felt. Where the scabs have come away the skin has a depressed and ulcerated appearance.

CASE 11.—N. L——, aged twenty, underwent the treatment for lupus of the submental and cervical glands. The patient had been inoculated (on Nov. 28th) with the full dose (0·01). The temperature rose to 104·4° in six hours. The temperature chart of this case was given in our last issue—(Case 2 in our issue of Nov. 29th), but which last week was erroneously described as having been inoculated on Dec. 3rd, the day of the demonstration. Some days afterwards, and when the temperature was at 100° F., a second full dose was administered, causing the temperature rapidly to rise to 105·3° F. in a few hours. The respiration was 44 per minute, and the pulse 164. Alarming symptoms continued, until the respirations numbered 60 and the pulse 170 per minute. The patient became cyanosed, parched with thirst, and was in a very distressed condition for many hours. On examining the lungs distinct dulness was discovered at both bases. From this time the patient began to improve, and now (Dec. 11th) appears to be in a perfectly healthy condition, and in no way suffering from any evil effects of the inoculations. Some of the lupus patches have healed up, whilst others are still discharging matter of a purulent nature. No distinct tubercles can now be felt.

Hospital for Diseases of the Throat.

CASE 1.—S. D——. Three cases were last week injected with Koch's fluid by Sir Morell Mackenzie. The first case was one of tubercular laryngitis or laryngeal phthisis, accompanied by slight consolidation below the left apex. About six hours after the injection the temperature began to rise, and in twelve hours it reached 103°, regaining its normal seven hours later. This patient showed well-marked changes in the larynx. Prior to injection the epiglottis, the arytenoids and the ary-epiglottic folds were swollen and pale. Both ventricular bands and the inter-arytenoid folds were implicated. After the injection the larynx swelled with the rise of temperature, the epiglottis becoming so large as to prevent a view of the interior of the larynx. The patient's voice is now much stronger and his general condition is much improved.

CASE 2.—G. M——, a boy aged eighteen, suffered from primary lupus of the larynx, which has lately developed on the face and implicated the mucous and epithelial surfaces of the mouth and nose. Both arytenoids were swollen and both vocal cords thickened. He was injected with 0·001 cc. of Koch's fluid. Great changes supervened, great swelling, redness, and purulent discharge, but with no rise of temperature or quickening of the pulse. When these symptoms were subsiding the temperature rose to 101° and continued high for nearly two days. On examining the throat the epiglottis was found to be so much swollen that only the posterior parts of the arytenoids could be observed, and these were much swollen. The parotid and submaxillary glands were found to be much swollen and very tender. The interesting point of this case is the manifest alterations in the affected sites without general symptoms, which appeared only after the local conditions were subsiding. The parts on Dec. 10th were much less swollen, and from the face a great discharge of pus and ulceration of the superficial tissue has taken place.

CASE 3.—H. W——, aged sixteen, was also suffering from laryngeal lupus, involving the organ to such an extent that six months ago tracheotomy was performed. With the use of the laryngoscope the epiglottis alone can be seen. It is pale and granular, and typical of laryngeal lupus of the epiglottis. After the injection reaction occurred. On examination of the larynx the affected part was found to be swollen and œdematous, becoming less so on the following day. The swelling is certainly less than before admission, the aperture leading into the glottis being larger. On Dec. 10th the swelling in the larynx was considerably less, and no necrotic changes have taken place.

Paddington-green Children's Hospital.

Mr. Watson Cheyne gave a demonstration of Koch's method in this hospital on Tuesday, Dec. 9th. A large number of medical men were present. The hospital is open daily from 3 till 5 P.M. to medical men who desire to watch the progress of the cases. The cases demonstrated were of surgical interest, and in many particulars similar to those already seen in King's College Hospital, including diseases of the bones and joints, tubercular peritonitis, and tubercular glands of the neck. Some medical cases were also put under treatment. In all cases reaction occurred, with the exception of one of adenoid vegetations.

We are informed that specimens of Dr. Koch's liquid have been received by physicians at the following hospitals: The Brompton Hospital, the Royal Hospital for Diseases of the Chest, City-road, and the Royal Hospital for Children and Women, Waterloo-bridge-road. A demonstration will also be given on Saturday next by Dr. F. Wethered at the Bristol Royal Infirmary.

THE BRITISH INSTITUTE OF MEDICINE.

THIS institute, which it is proposed to found, is for the purpose of obtaining in Great Britain the same benefits as are conferred on other countries by institutions specially devoted to bacteriology, such as that established in Paris in honour of M. Pasteur. At a meeting at the Mansion House on Dec. 5th, an executive committee (which represents a larger committee) was formed, to take measures for the purpose. Sir Joseph Lister is chairman of the committee, and it comprises Sir Andrew Clark, Sir James Paget, Sir Spencer Wells, Sir George Paget, Sir James Crichton Browne, Sir Henry Roscoe, Sir James Wilson, Professors Huxley, Humphry, Victor Horsley, E. Ray Lankester, and Pemberty; Dr. Bridgwater, Mr. Hutchinson, Mr. Watson Cheyne, Dr. Macalister, Mr. Sidney Turner, Mr. E. Hart; secretaries, Professor Roy and Dr. Ruffer.

It is felt that the foundation in this country of an institute in which investigations on the causes and best means of preventing and curing infectious diseases can be carried on, and in which protective material can be prepared in sufficient quantity to supply the national wants, has become necessary. It is surely neither fitting nor politic for England to be dependent on the national laboratories of France and Germany for obtaining the means of preventing and curing infectious diseases. It is, indeed, a reproach to this country that in a matter of such vast importance to the nation we should be behind France, Germany, Russia, Italy, Spain, Switzerland, Roumania, or Brazil, which countries are already provided with institutes of this kind.

The President and Council of the Royal Society passed a resolution: "That they learn with satisfaction that steps are being taken to establish an institution in which researches in bacteriology and into the nature and prevention of infective diseases can be carried on, and hope that, at some future time, they may find it within their power to aid such researches by material support."

The Council of the British Medical Association has also expressed its approval of the institute, having passed the following resolution:—"That the Council highly approves the idea of a National Institution for the study of Bacteriology, and, in the event of one being established on a basis commensurate with the objects stated in the memorandum

of Sir James Whitehead's committee, will recommend the next annual meeting to authorise the Council to apply such sum (not exceeding £300) as may be one-fifth of the expenditure for the current year."

Cambridge has been selected as the site of the institute, among other reasons, because (1) of the number of large laboratories of physiology, pathology, chemistry, and the working staff associated with those laboratories; (2) the association of the institute with one of the larger universities would be a guarantee that the work carried out at such an institute would maintain a high scientific standard; (3) railway communication with London is good, only one hour and a quarter being required; Cambridge is easily accessible from all parts of England. We sincerely wish well to the institute, and trust that it may be so founded and maintained as to redeem our country from the disgrace of being so much behind France and Germany in promoting the great and humane work of preventing and arresting disease.

LONDON COUNTY COUNCIL.

AT the usual weekly meeting of the London County Council, held on Tuesday, Dec. 9th, the adjourned debate on the report of the Housing of the Working Classes Committee was resumed. It was stated that negotiations had been entered into for the purpose of securing two vacant sites about 150 yards from the insanitary area for the purpose of rehousing the persons who would ultimately be displaced by the proposed clearance in Bethnal-green. The recommendation that the Council pass a resolution providing for the acquisition of this land between Gossitt-street and Duke-street was allowed to be withdrawn on the suggestion of Earl Compton. The Parliamentary Committee reported that they had decided to introduce a Bill to prohibit or regulate sky signs, and not attempt to deal with the subject as part of the general powers Bill, and recommended the Council to affix the seal of the Council to the petition for leave to bring in the Bill. The recommendation of the committee was agreed to. The special committee on water-supply recommended the Council to adopt the following motion: "That, in the opinion of the Council, it is necessary to inquire whether the present sources of supply of water are adequate to the growing demands of the population in quantity and quality, and that Her Majesty's Government be requested to institute an immediate inquiry whether any and what steps should be taken to provide a new and better supply, so that a report may be made thereon in the course of the ensuing session." Sir Thomas Farrer said that the committee did not think it right, in framing this resolution, to dictate to the Government the actual form the inquiry should take, but they left the Government to judge of the best way in which such inquiry should be conducted. The recommendation of the committee was agreed to. The Housing of the Working Class Committee, of which Earl Compton, M.P., is chairman, has reported on the policy which it is proposed should be pursued by the Council in administering the new sanitary regulations. As regards insanitary houses, the Council are desired to adopt the method of watching the subsequent proceedings of the district authorities in dealing with them; and if the Council is satisfied that there is default, then, and not till then, to cause the statutory month's notice to be given of the intention of the Council to apply for a closing order. If the report of the medical officer on obstructive buildings be such as to necessitate action, the committee will cause his representation to be forwarded to the district authority. The committee propose to instruct the medical officer of the Council to give facilities to the local medical officers of health for conferring with him when they desire to do so. As to the improvement schemes for clearance under Part II., it is pointed out that such schemes may be initiated either by the district authorities or by the Council. The course suggested by the report is for the Council to pass a resolution to the effect required, and thereupon to frame a scheme, accompanied by plans, showing the method of dealing with the area in question. The compensation is to be settled by arbitration (the arbitrator being appointed by the Local Government Board). The course to be taken, if the Council initiate the scheme, is similar to that given above. The authority initiating a scheme is the one who would naturally have the carriage of it; but the Council when asked to contribute can attach as a condition that the clearance and letting of the site shall be effected under its superintendence.

THE ROYAL COLLEGE OF SURGEONS AND THE UNIVERSITY OF LONDON.

THE following memorial has been addressed by the Association of Fellows of the College to the Registrar of the University of London:—

The committee of the Association of the Fellows of the Royal College of Surgeons, having heard that the Council of the College is now engaged in final negotiations with the University of London respecting the reconstitution of the University, begs to lay the following points before the Senate of the University of London:

1. That these negotiations have been carried on without the knowledge or cooperation of the Fellows or Members of the College of Surgeons.

2. That the Council have declined to consult the Fellows of the College in regard to these negotiations, on the ground that they are unable to do so under their charter and by-laws.

3. That, contrary to the expressed wish of the Fellows and Members of the College in general meeting assembled, the Council is negotiating changes in metropolitan medical graduation which must materially alter the constitution and influence the status of the College without submitting the matter to a general meeting of the College.

4. That the Council, as an executive committee of twenty-four appointed to administer collegiate affairs, have been in no way empowered to treat with the University of London in such a matter of collegiate policy, and the Members of the Council are confessedly imperfectly acquainted with the intricate questions involved in the scheme of University reconstitution.

5. That the Fellows of the College of Surgeons in this matter occupy an inferior position to that of the Fellows of the Royal College of Physicians—inasmuch as the government of that College is vested in the whole body of Fellows, and it is they who are negotiating with the University on behalf of that body.

6. That the various schemes prepared by the Senate of the University which have from time to time been published have presented several vital points upon which the opinion of a large body of Fellows is opposed to that set forth by the Council, and which must, unless modified, fail to satisfy the medical and surgical requirements of metropolitan students.

LASTLY.—The Committee of the Association of Fellows of the Royal College of Surgeons urges upon the Senate and Convocation of the University the inevitable risks of dissatisfaction and failure which their reconstitution scheme must incur should it be finally adopted without the Fellows of the Royal College of Surgeons having had any opportunity to consider and suggest amendment, and this Committee warns the University against regarding the negotiations with the College of Surgeons as settled unless and until the Fellows of the College have had an opportunity of laying their views before the Senate.

The Committee is speaking on behalf of an Association consisting of more than 300 out of less than 1000 Fellows resident in the United Kingdom.

Public Health and Poor Law.

LOCAL GOVERNMENT DEPARTMENT.

REPORTS OF MEDICAL OFFICERS OF HEALTH.

St. Asaph Rural District.—A gradually diminishing death-rate has been a characteristic of this district, and last year the rate was 12·8 per 1000, the amount of infant death and of zymotic death being also small. Such instances of infectious disease as did occur are described by Dr. Lloyd-Roberts, who also refers to the precautionary measures adopted. No new works were carried out during the year, but a scheme for the sewerage of Prestatyn was adopted by the authority. Urban powers as to a number of matters have been acquired, and new by-laws will be made as to such subjects as new buildings, removal of refuse, and slaughter-houses. The overcrowded state of the burial yards is adverted to at some length, and advice is given as to the conditions necessary for proper burial. There is evidently need for a good deal of further sanitary work in this district, in such matters as drainage and water-supply, before there can be any assurance that the present low death-rate stands a chance of being maintained.

Jarrow Urban District.—The coincidence in one year of an epidemic of measles, together with a hot summer and the resulting high mortality from diarrhœa, led to a death-rate of 21·2 per 1000, which, under the circumstances, is not

regarded by Dr. Campbell Munro as excessive; indeed, it only just exceeds the decennial mean of 20·9. The measles epidemic is discussed at length by Dr. Munro in connexion with the influence of the elementary schools and compulsory notification; and it is stated that whereas there is a common impression that notification in the case of this disease is useless, the experience of Jarrow is a direct refutation of that statement. Good work is at last in progress in the direction of the abolition of the midden-privy, which may well be regarded as the sanitary abomination of the north of England; and in regard to the general supervision of health, inspections, analyses, &c., continue to be made, such work including the destruction of meat of tuberculous animals.

Bolton Urban District.—The annual rate of mortality for Bolton during 1889 was 22·0 per 1000 living, the zymotic rate was as high as 4·1 per 1000, and the proportion of deaths under one year to every thousand births was 166, measles, scarlet fever, and diphtheria being above the average. The diphtheria was associated with conditions of drainage and sewerage calling for amendment, and Mr. Sergeant urges that further action should be taken by way of disconnecting house drains and of providing additional means of sewer ventilation. In all, 1495 cases of infectious disease were notified, of which no less than 1256 were cases of scarlatina. Of these, 292 were removed to the isolation hospital; indeed, the hospital was mainly used for that disease. In connexion with the general sanitary work of the district, 2574 houses were visited, 111 milk-sellers have been placed on the register, 100 nuisances were abated in respect of bakehouses, animals for slaughter were inspected, and 42 articles were analysed, with the result that only four were found adulterated. The report contains in an appendix a large amount of valuable statistical and tabular matter.

Hanley Urban District.—Dr. J. S. Walker gives some complete statistics as to the borough of Hanley, from which we gather that the death-rate for 1889—namely, 19·6 per 1000—was below the average. There is some diminution also in the infantile rate, which has long been excessive in Hanley, and which is still far above what it ought to be. The zymotic rate of 3·3 per 1000 is also high, and measles, which caused 107 deaths, very largely contributed to it. This outbreak was the subject of an inquiry by Mr. Spear, to whose report we adverted at the time in connexion with the question of the influence of school closure in the prevention of this disease. The infectious hospital was only used for six patients. There is but little account in the report of the general sanitary circumstances and needs of the district; but it is evident from Dr. Walker's reference to his own inspections, and to the record of the sanitary inspector which is appended, that good work is constantly in progress.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN twenty-eight of the largest English towns 5098 births and 3999 deaths were registered during the week ending Dec. 6th. The annual rate of mortality in these towns, which had been 21·3 and 19·0 per 1000 in the preceding two weeks, rose again to 21·5 last week. The rate was 20·4 in London and 22·3 in the twenty-seven provincial towns. During the past ten weeks of the current quarter the death-rate in the twenty-eight towns averaged 20·6 per 1000, and slightly exceeded the mean rate in the corresponding periods of the ten years 1880–89. The lowest rates in these towns last week were 12·7 in Hull, 16·0 in Brighton, 16·2 in Nottingham, and 16·7 in Bradford; the highest rates were 27·9 in Bolton, 28·2 in Manchester, 29·9 in Halifax, and 36·2 in Preston. The deaths referred to the principal zymotic diseases, which had been 481 and 427 in the preceding two weeks, rose again last week to 473; they included 202 from measles, 69 from whooping-cough, 64 from scarlet fever, 63 from diphtheria, 49 from "fever" (principally enteric), 26 from diarrhœa, and not one from small-pox. The lowest death-rates from these diseases were recorded in Derby, Nottingham, Hull, and Newcastle-on-Tyne; the highest in Oldham, Manchester, Birkenhead, and Preston. The greatest mortality from measles occurred in Bristol, Manchester, Bolton, Oldham, Preston, and Birkenhead; from scarlet fever in Sunderland, Blackburn and Liverpool; and from whooping-cough in Preston, Sunderland, and Norwich. The mortality from "fever" showed no marked excess in any of the twenty-eight towns. The 63 deaths from diphtheria included 41 in London, 6 in Manchester, 5 in Salford, and 3 in Portsmouth. No death from small-pox was registered in any of the twenty-eight towns; and no small-pox patients were under treatment in the Metropolitan Asylum Hospitals or in the Highgate Small-pox Hospital on Saturday last. The number of scarlet fever patients in the Metropolitan Asylum Hospitals and in the London Fever Hospital at the end of last week was 1913, against numbers declining from 2122 to 2000 on the preceding four Saturdays; the patients admitted during the week were 151, against 205 and 139 in the previous two weeks. The deaths referred to diseases of the respiratory organs in London, which had been 459 and 375 in the preceding two weeks, rose again last week to 444, and almost corresponded with the corrected average. The causes of 82, or 2·1 per cent., of the deaths in the twenty-eight towns were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Plymouth, Wolverhampton, Derby, Blackburn, and Huddersfield. The largest proportions of uncertified deaths were recorded in Liverpool, Halifax, Sheffield, and Hull.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in the eight Scotch towns, which had been 21·3 and 20·7 per 1000 in the preceding two weeks, rose again to 22·1 during the week ending Dec. 6th, and exceeded by 0·6 the rate that prevailed during the same period in the twenty-eight large English towns. The rates in the eight Scotch towns ranged from 18·2 in Edinburgh and 19·4 in Dundee to 28·9 in Greenock and 31·1 in Paisley. The 571 deaths in the eight Scotch towns showed an increase of 35 upon the number in the preceding week, and included 13 which were referred to whooping-cough, 12 to measles, 11 to diphtheria, 10 to diarrhœa, 7 to scarlet fever, 7 to "fever," and not one to small-pox. In all, 60 deaths resulted from these principal zymotic diseases, against 65 and 87 in the preceding two weeks. These 60 deaths were equal to an annual rate of 2·3 per 1000, which was slightly below the mean rate last week from the same diseases in the twenty-eight English towns. The fatal cases of whooping-cough, which had been 12 and 24 in the previous two weeks, declined again last week to 13, of which 9 occurred in Glasgow. The deaths from measles, which had increased in the preceding four weeks from 10 to 24, declined last week to 12, of which 6 were recorded in Glasgow and 6 in Greenock. The 11 fatal cases of diphtheria showed a decline of 4 from the number in the previous week, and included 3 in Glasgow, 3 in Edinburgh, 3 in Leith, and 2 in Aberdeen. The 7 deaths referred to different forms of "fever" showed a slight further decline from recent weekly numbers; 3 occurred in Edinburgh and 2 in Glasgow. The 7 fatal cases of scarlet fever were within one of the number in the preceding week, and included 4 in Glasgow. The deaths referred to diseases of the respiratory organs in the eight towns, which had been 142 and 134 in the preceding two weeks, rose again last week to 159, but were 7 below the number in the corresponding week of last year. The causes of 74, or nearly 13 per cent., of the deaths in the eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had increased in the preceding four weeks from 20·7 to 24·5 per 1000, further rose to 29·7 during the week ending Dec. 6th, and exceeded the rate recorded in any week since March last. During the first ten weeks of the current quarter the death-rate in the city averaged 23·1 per 1000, the rate for the same period being 19·5 in London and 17·8 in Edinburgh. The 201 deaths in Dublin showed an increase of 36 upon the number in the preceding week, and included 4 which resulted from different forms of "fever," 4 from whooping-cough, 3 from diarrhœa, and not one either from small-pox, measles, scarlet fever, or diphtheria. Thus the deaths referred to the principal zymotic diseases, which had increased from 6 to 17 in the preceding three weeks, declined again last week to 11; they were equal to an annual rate of 1·6 per 1000, the rate from the same

diseases being 2·4 in London and 1·9 in Edinburgh. The fatal cases of "fever," which had increased in the preceding three weeks from 2 to 11, declined again to 4 last week. The deaths referred to whooping-cough, which had been 4 and 3 in the previous two weeks, rose again to 4 last week. The 3 deaths from diarrhœa corresponded with the number in the preceding week. The 201 deaths in the city included 32 of infants under one year of age, and 63 of persons aged upwards of sixty years; the deaths both of infants and of elderly persons considerably exceeded those recorded in the preceding week. Seven inquest cases and 6 deaths from violence were registered; and 66, or nearly a third, of the deaths occurred in public institutions. The causes of 33, or more than 16 per cent., of the deaths in the city were not certified.

THE SERVICES.

Brigade Surgeon Henry V. Carter, M.D., Retired List, Bombay Medical Department, Honorary Surgeon to the Queen, has been granted the honorary rank of Deputy Surgeon-General, in consideration of his eminent services to Medical Science (dated Nov. 8th, 1890).

ARMY MEDICAL STAFF.—Deputy Surgeon-General Jas. Landale, M.D., retires on retired pay (dated Dec. 10th, 1890); Surgeon Norman Hay Forbes resigns his commission (dated Dec. 10th, 1890).

ARMY MEDICAL RESERVE OF OFFICERS.—Surgeon James Scott Wilson, M.D., having vacated his Volunteer Medical appointment, ceases to be an Officer of the Reserve (dated Dec. 10th, 1890).

ADMIRALTY.—Staff Surgeon Christopher Harvey has been promoted to the rank of Fleet Surgeon in Her Majesty's Fleet (dated Nov. 28th, 1890). Mr. Thomas Kean has been appointed Surgeon and Agent at the Isle of Arran.

VOLUNTEER CORPS.—*Rifle:* 1st Lanarkshire: Surgeon and Surgeon-Major J. Whitson, M.D. (ranking as Major), resigns his commission; also is permitted to retain his rank, and to continue to wear the uniform of the Corps on his retirement (dated Dec. 6th, 1890).—2nd Volunteer Battalion, the South Staffordshire Regiment: Acting Surgeon J. K. Butter, M.D., to be Surgeon (dated Dec. 6th, 1890).

Correspondence.

"Audi alteram partem.

LIFE ASSURANCE AND THE MEDICAL PROFESSION.

To the Editors of THE LANCET.

SIRS,—Dr. Clouston's letter in THE LANCET of Nov. 29th is a most admirable summary of the advantages of life assurance to members of the profession, and I hope it will be duly acted upon by some at least of the number of your readers who are not insured—I fear a large proportion. The total number of British medical practitioners is, according to this year's Medical Directory, 29,372, of whom 24,000 are in the United Kingdom. One cannot help regretting that a Medical Mutual Assurance Society was not started many years ago on the same lines as the Clergy Mutual for medical practitioners, their near relatives, and connexions. Properly worked, it might have been very successful. But in these days it is better for well-established offices to amalgamate than for new ones to be established. Dr. Clouston's estimate of 5 per cent. of working expenses is too low. Those of the Norwich Union are, I believe, 9 per cent., and this is not at all excessive, but moderate. Dr. Clouston does not warn your readers against insuring in newly-formed offices. Without doing them any injustice it may be laid down as a canon that it takes at least thirty years for an office to be well secured against all contingencies. If I may judge from what I have heard and read, medical assurers have been most unfortunate in their choice of an office, and have asked with much feeling "Is any office safe?" This distrust is absurd. For while most, if not all, of those offices which have proved failures have been of more or less recent growth, the offices established in the last and previous centuries still survive in a flourishing condition, and most of those established in the first half of this century are thoroughly sound and reliable offices. If safety be the only requirement no one need be afraid. It may be laid down as another canon that any office of fifty years' standing doing a good annual business and economically worked is safe.

Dr. Clouston's suggestion of parents insuring their sons' lives, though not a new one, is one which cannot be repeated too often. But I would urge all young members of the profession to insure as soon as they possibly can if only for £100. A very little self-denial will enable them to do this. They know how uncertain is any individual medical practitioner's life, and what a relief it would be to many to know that should death come there is enough to pay all debts and expenses and to leave a small legacy to the old folks at home. On the other hand, a policy of £100 in a good office with profits will in thirty years be nearly, if not quite, £200.

It is really painful to see how many widows and orphans of medical men are left either totally unprovided for or only very slenderly so. Then appeals have to be made to the profession, and these are not always so successful as could be wished, since members of our own, as of other professions, must be just before they can be generous. Life assurance is a *positive duty* for those whose death would mean a total want of the means of living to widow and orphans, and Dr. Clouston does not put the case at all too strongly when he says, "you certainly have no moral right to beget paupers for others to support." It is, however, a great mistake to regard life assurance as only intended for those who are married or are about to be. Single men should insure while, their expenses being moderate, they can afford the premium better, and have a policy with bonuses all ready for settlement before the wedding day, while to all members of the profession a policy of insurance in a sound office is a good investment for money.

I am, Sirs, yours faithfully,

Liverpool, Dec. 6th, 1890. FREDK. W. LOWNDES.

THE NATURE OF "PARATOLOID."

To the Editors of THE LANCET.

SIRS,—Although the recent researches in Berlin are allied, up to a certain point, to some of my own (conducted over twenty-five years ago) on the substance I separated and named "septine," I have been mute on the current and all-absorbing professional topic, in the hope that the composition of the fluid named "paratoloid" would be made known to us spontaneously. I feel now, however, the time has arrived when a suspicion which has occurred to me naturally enough, from the remembrance of old experimental observation, should be recorded. The body I called "septine," an organic poison derived from the secretions of persons and animals suffering from various diseases, was so virulent in its action that, in an essay published for me by Messrs. Churchill in 1867 on the "Poisons of the Spreading Diseases," I compared it to snake venom in activity, and as capable of setting up, in the lower animals, the acutest symptoms when injected, as it always was, hypodermically, even after being reduced or attenuated by dilution in glycerine and water. I obtained "septine" from the abdominal peritoneal secretion of a pyæmic patient under the care of Sir Spencer Wells, from the urine of a patient suffering from tetanus, from the expectoration of a phthisical patient, and from other sources, including saliva. I remember the symptoms produced well, and my suspicion is that in "paratoloid" the organic base is derived from the sputum of patients suffering from phthisis pulmonalis, or from some other tuberculous secretion. If this view be correct, it accounts for the symptoms produced by "paratoloid," and for the reticence in regard to its composition until the gigantic curative results expected from it are secured. I am, Sirs, yours faithfully,

Manchester-sq., W., Dec. 11th, 1890. B. W. RICHARDSON.

PROFESSOR KOCH'S REMEDY FOR TUBERCULOSIS.

To the Editors of THE LANCET.

SIRS,—Having read with keen interest the copious and minute descriptions of Professor Koch's method of treating tuberculosis, some phases of the subject appear to me

not to have been sufficiently dwelt upon. The history of tuberculous patients, and perhaps more especially those in whom pulmonary tuberculosis is the form assumed, gives somewhat presumptive evidence that some substance is manufactured and exists amidst the complex products of nutrition on which the bacillus tuberculosis thrives apace, and that such persons are peculiarly liable to infection, while others who are minus this hypothetical substance may be considerably exposed to infection without danger. Suppose that a person with pulmonary tuberculosis, and having a well-marked hereditary predisposition, be treated and apparently cured, is it not probable that the fluid and any chemically changed tissues it may produce (if unnecessary to the organism) will be eliminated from the system, while the predisposing causes may remain awaiting the advent of germs, from old infected foci or from without, to bring about the previous condition? In this I refer especially to tubercular diseases of internal organs removed from the reach of the surgeon. Professor Koch states that the fluid injected does not kill the microbe, but only destroys the tissue in which it exists. May not the microbe migrate to the immediately adjacent surrounding tissue and there thrive and multiply? Save where the infected parts are accessible to the surgeon, it is to me difficult to understand by what *modus operandi* the cure is to be effected, seeing that the microbe is not killed and is free to migrate or to be carried into surrounding tissues. But even supposing that the method is applicable successfully to surgical diseases alone the boon conferred on humanity by Professor Koch is vast in the extreme.—I am, Sirs, yours truly,

Bromley, Kent, Dec. 1890. J. A. ROSS, M.D.

To the Editors of THE LANCET.

SIRS,—Although no definite opinion can at present be expressed as to the ultimate results of Professor Koch's treatment, I think that it is generally admitted by those who have had an opportunity of witnessing it that very promising alterations are effected in some cases, and there is no doubt that the profession desire to become acquainted with the details necessary for carrying it out. Many individuals are anxious to avoid the long and tedious journey to Berlin, and for them it is possible to see cases in London; but having had an opportunity of visiting both centres, I have no hesitation in saying that it is in the former alone that all the conditions can be fully studied. The lymph is plentiful, the cases numerous, the hospitals always open to us, and every facility afforded for observation of all the symptoms produced. At one hospital we were able to see cases of phthisis (lung and larynx), lupus, and diseased joints in men, women, and children; also many cases that had been injected for diagnostic purposes, and three distinct forms of rash produced by the treatment. We were allowed to perform injections, and to return at our pleasure to note their effect. The professors are always willing to offer any explanation, often in our own tongue, and their one aim seems to be to welcome and encourage bedside observation, which we know is far more valuable—at any rate to qualified men—than clinical lectures. I shall ever feel most deeply grateful to the professors in Berlin for their generous and kind-hearted behaviour.

I am, Sirs, yours obediently,

J. LIONEL STRETTON,
Hon. Surgeon, Kidderminster Infirmary and Children's Hospital.

Dec. 8th, 1890.

LEPROSY AND PROFESSOR KOCH'S TREATMENT.

To the Editors of THE LANCET.

SIRS,—From the pathological analogies of tuberculous and leprous tissue, and from the similarity of the respective bacilli in certain of their relations, it occurred to me that like results might be expected by the use of Dr. Koch's remedy in cases of leprosy. I accordingly wrote to the Professor on the subject some weeks ago, and he has now been kind enough to send me a supply of the fluid, particularly for the use of leper patients. I shall be glad to hear from any medical man who may have a case of the kind at present in England and willing to be treated. A definite effect has, I believe, already been obtained in Vienna by Professor Kaposi in a leper; and I understand that the remedy is now being tried, by Dr. Koch's advice, for leprosy in Germany.—I am, Sirs, yours obediently,

PHIN. T. ABRAHAM, M.D.,
Medical Secretary National Leprosy Fund.

Henrietta-street, Cavendish-square, W., Dec. 8th, 1890.

RESECTION OF LAMINÆ FOR SPINAL CARIES.

To the Editors of THE LANCET.

SIRS,—In an interesting paper on a case of resection of laminæ for spinal caries (THE LANCET, Dec. 6th, 1890), Mr. Page asks for the experience of other surgeons as regards this operation, of which only twenty-three instances have been recorded up to the present time, in order that some statistical conclusions may be drawn as to its value in cases of this nature. Having performed the operation on three patients at the Manchester Clinical Hospital for Women and Children, I may, perhaps, be permitted to briefly describe the results in my two last cases, hitherto unpublished. My first is included in the table of thirteen cases, collected by my colleague, Mr. Thorburn, and referred to by Mr. Page in his paper.

CASE 2.—Female, three years and a half; cervical caries; complete loss of power in upper and lower extremities; incontinence of urine and fæces. Oct. 25th, 1889: Resection of laminæ of sixth and seventh cervical vertebræ; canal filled with soft granulation tissue, which was dissected off cord; dura mater not opened; no visible pulsation. Operation followed by partial return of power in arms, but no improvement in condition of lower extremities. Jan. 15th, 1890: Resection of laminæ of fourth and fifth cervical and first dorsal vertebræ; no further improvement. Present condition: firm depressed cicatrix at seat of operation; can use her arms to feed herself, play with toys, &c.; more power over bladder and rectum. During last few months has regained very slight voluntary movements in lower extremities.

CASE 3.—Female, five years; dorsal caries; complete motor and partial sensory paralysis in lower extremities. Jan. 31st, 1890: Resection of laminæ of third, fourth, and fifth dorsal vertebræ; escape of a little pus from spinal canal, which communicated in front with a small abscess cavity between bodies of third and fourth dorsal veretebræ; cord exhibited no pulsation; dura mater not opened. Operation not followed by any improvement in patient's condition. Progressed favourably for some days, then developed symptoms of broncho-pneumonia, and died on ninth day. I am, Sirs, yours faithfully,

Manchester, Dec. 8th, 1890. F. A. SOUTHAM.

INJECTING THE BLADDER IN SUPRA-PUBIC CYSTOTOMY.

To the Editors of THE LANCET.

SIRS,—Dr. Hooper May, in the last issue of THE LANCET, commenting upon a series of cases of supra pubic cystotomy, remarked that in one instance the operation was rendered much more difficult in consequence of the impossibility to introduce a catheter, and therefore *the bladder could not be distended* (The italics are mine.) From this I gather that it is not universally known that there is no necessity whatever to introduce or even use a catheter for the purpose of injecting the bladder. Any ordinary syringe, provided it possesses a suitable nozzle, can be inserted into the meatus urinarius, and any desired amount of fluid can be forced along the urethra into the bladder. For some years, both in hospital and private practice, I have been in the habit of injecting the bladder in this manner, and I was very much astonished to discover last summer during a course of post-graduate lectures that this plan was evidently a novelty to the majority of surgeons. I may also take this opportunity of drawing attention to the great advantage this method of injecting the bladder has in some cases of cystitis where from any cause it is either impossible or undesirable to pass a catheter for the purpose of irrigating the bladder. With a four-ounce elastic enema syringe hot medicated lotions can with the greatest ease be injected, and, what is of further moment, the contents of the bladder can again be exhausted by gently relaxing the pressure on the elastic ball.

I am, Sirs, yours faithfully,

Manchester, Dec. 9th, 1890. WALTER WHITEHEAD.

"PES PLANUS."

To the Editors of THE LANCET.

SIRS,—In the paper by Mr. A. G. Miller, of which THE LANCET of Nov. 8th contains an abstract, he very rightly differentiates between pes planus and talipes valgus, but he is not quite correct in stating that "in the early stage of flat-foot pes planus is alone present," although this is true of those numerous cases of telegraph boys, postmen, and adolescents who have to stand much or carry heavy weights. In the rachitic forms of flat-foot and those so frequently occurring in young growing girls the stretching of the deltoid ligament of the ankle-joint (valgus ankle) usually precedes the giving way at the calcaneo-scaphoid articulation, and these are generally associated with genu valgum and also occasionally with tibial curves, the cause of the flat-foot being secondary and static. The only cases where I have found genu valgum associated with talipes varus have been congenital or connected with a partially paralytic state of the peronei muscles. In a paper I read at the Birmingham and Midland Counties Branch of the British Medical Association in 1888 on the Surgical Aspect of Rickets,[1] in speaking of the treatment of flat-foot, I referred to the principles now mentioned by Mr. Miller—namely, the sole thickened on the inner side, exercises, and massage. The exercises consist of movements downwards, inwards, and upwards twenty times night and morning, at first active only, and later, with resistance, by a second person; also walking on tip-toe with feet inverted several times across a room. Mr. Roth, I believe, was the first to enunciate these movements, as also the more rational treatment of scoliosis. In the more severe forms, however, where the scaphoid is subluxated to such an extent that the tubercle is in contact with the ground, in consequence of the stretching of the inferior calcaneo-scaphoid ligament, these methods are impossible until *redressement forcé* has been applied. This consists of forcibly adducting the anterior part of the foot with both hands, the thumbs being placed over the tubercle of the scaphoid, which is pushed back at the same time that the tendons and ligaments on the outer side are stretched, until the foot assumes a condition of extreme varus, when a large pad is placed in the arch, and the foot bandaged to a curved, padded, malleable iron splint bent to the shape of the foot in its new position. The operation must necessarily be done under an anæsthetic, as the pain even of the slightest movement is sometimes excruciating. The splint is worn for at least a fortnight before the boots with thickened soles are applied and the exercises proceeded with, as in milder cases. Occasionally I meet with severe cases, that require *redressement* more than once, but very rarely is there absolute peroneal contraction (true talipes valgus), requiring tenotomy, the apparent contraction being almost invariably due to reflex spasm and entirely disappearing under the anæsthetic. While agreeing that pads &c. in the boots are not curative, and in slight cases often harmful, it is necessary in severe cases to use some support at first, and for this purpose I prefer what is called "Holland's instep arch," consisting of a piece of shaped hardened steel let into a thin wash-leather sole, which can be taken out of the boot at will. I can endorse what Mr. Miller states respecting tarsectomy, never having seen a case, among several hundreds under the care of my colleagues and myself, where this operation was required.—I am, Sirs, yours obediently,

E. LUKE FREER,
Hon. Surgeon, Birmingham Royal Orthopædic and Spinal Hospital.

OVER-DOSE OF CHLOROFORM.

To the Editors of THE LANCET.

SIRS,—I operated for stone on a Hindu boy of about eighteen years on Oct. 15th. I first tried lithotrity, but could not grasp the stone; this I discovered afterwards was due to my not realising the large size of the stone. I changed the operation then to lateral lithotomy, and found that the stone was rather larger than I had expected. While endeavouring to extract it through the wound, I was informed that the patient had stopped breathing; so, leaving the operation, I immediately commenced artificial respiration by Silvester's method. I kept it up for about a minute myself, and then was relieved by Assistant Surgeon H. G. Chatterjee. I now for the first time looked to the pulse, and found that it was still beating, although the breathing had ceased for quite one minute, if not longer. I regret to say that the time was not taken throughout. Before this I had begun to look upon the case as hopeless, as the boy had been under chloroform for about one hour and a half, and was weak and debilitated. The state of the pulse encouraged me to proceed, and after about another minute a few sighing respirations took place. We now stimulated him by dashing cold water on his chest &c., but, on stopping artificial respiration, his breathing again ceased. So artificial respiration was resumed, and continued till the natural act was well established. I now returned to the operation, pulled the stone well down, cut away the structures impeding its exit, and forcibly extracted it. The stone was of oxalic acid, with a thin coating of phosphates, which had crumbled away during extraction. It was nearly round in shape, 2¼ in. by 2 in., and weighed two ounces. I believe in this case that the heart never stopped beating; it certainly never did after I first found the pulse acting, so that only the respiration was affected. This was a case of simple over-dose, as our regular anæsthetist was absent; and his substitute, I believe, became too interested in my endeavours to extract the stone, and so administered too much chloroform.—I am, Sirs, yours truly,

E. A. W. HALL, M.B., C.M. Ed., I.M.S.,
Barabanki, Oudh, Nov. 19th, 1890. Civil Surgeon, Barabanki.

DR. MACEWEN'S OPERATION FOR ANEURYSM

To the Editors of THE LANCET.

SIRS,—I have read with great interest Dr. Wm. Macewen's inaugural address, delivered before the Midland Medical Society, on Aneurysm, and its Cure by inducing the formation of White Thrombi within the Sac. This is quite a new departure in the treatment of aneurysm, and gives promise of success in many cases which have hitherto been regarded as hopeless. I do not think his definition a happy one, and beg to suggest a more suitable one. A thrombus is defined in Hoblyn's Medical Dictionary: "θρόμβος, coagulated blood; a clot of blood, also a tumour formed by a collection of extravasated coagulated blood." Now this hardly represents the physiological or pathological process set up by scratching the inner coat of the aneurysm with a needle. The course of reasoning in Dr. Macewen's mind has probably been, if he produced a certain amount of irritation of the lining membrane of the aneurysm he would have an effusion of lymph and a deposit of a white fibrinous coat, which by additions would get thicker and thicker, and ultimately occlude the sac, followed by contraction of the tumour and cure. And I think he has much too modestly estimated the scientific and well-reasoned operation which he has placed at the service of the surgeon; for it seems to me this is an entirely new departure, based on physiology, and has no relation whatever to a thrombus, white or red, or any of the old and unscientific methods of introducing wire or other foreign bodies into the sac. I would suggest as a suitable name for the operation "Chitoknisma," and "chitonise" for the verb "to operate," from χίτων, a coat, tunic, or skin, and κνισμα, that which is scraped, and κνίζω, to scrape—meaning to scrape or scratch the coat or lining of the sac. This would accurately describe the operation.

I am, Sirs, your obedient servant,
Spondon, Derby, Dec. 2nd, 1890. B. WALKER.

THE INDIAN MEDICAL SERVICE.

To the Editors of THE LANCET.

SIRS,—"It will henceforth be a condition of appointment to the Indian Medical Service that an officer retiring on pension before completing thirty years' service shall be liable till he completes fifty-five years of age to be recalled to duty in case of any emergency" (from the Right Hon. the Secretary of State for India, Sept. 11th, 1890, No. 165). I do not think that this circular and its consequences can be too widely known among those who have any idea of entering the Indian Medical Service. That service, during

[1] Prov. Med. Journ., May, 1889.

the last twenty years, has been shorn of many appointments, and of much that made it popular; but, when thoroughly understood, the Secretary of State's resolution, quoted above, will do more to damage it than anything else hitherto. In a country which has little attraction in it, and which possesses a climate that damages every European constitution, many medical officers look forward to terminating their exile at the end of twenty years' service, when they can retire on £365 per annum, with a possibility of supplementing that pension by work of their own choosing, *in a good climate*. At twenty years' service an Indian medical officer is, on an average, about forty-four years of age. Hitherto, as a reward for living a life of exile in a bad climate, he has been allowed to retire on £292 at the end of seventeen years, £365 at twenty years, £500 at twenty-five years. A very large proportion retires at the two latter periods, and therefore this new rule, by which a man who has comfortably settled at home is liable to be dragged out to India on the occurrence of famine, or war, or other emergency, is a very great hardship, and should call for the action of those bodies which have already memorialised the Government on the subject of army doctors' position, rank, titles, &c. For my part, I should strongly advise anyone against entering the Indian Medical Service while such a condition exists. To those who know not India, and who are young and healthy, it may seem no hardship, for they cannot realise as we can out here the longing which comes over us, when nearing twenty years' service, to quit the country, and the heat, and the dismal dulness of the Indian life, to live at home among home faces, and scenery, and surroundings before we are too old to enjoy them, or before we die.

I am, Sirs, yours faithfully,

SURGEON-MAJOR, INDIAN ARMY.

"THE EPIDEMIC OF INFLUENZA."

To the Editors of THE LANCET.

SIRS,—I have read with much interest Dr. Prout's letter under this heading on page 370 of THE LANCET of Aug. 16th, because my experience of the clinical features of the disease—described by him as greatly resembling those of epidemic influenza at home—is in a great measure in accord with his. But, as there is a point or two in his observations upon which our experiences are not wholly in consonance, I venture, with your kind permission, to offer the result of my experience on the subject.

Whilst in medical charge of Kwitta station a detachment of the Gold Coast Constabulary, about sixty strong, under a European officer, was sent to the interior on patrol about the middle of April of the present year. It being the beginning of the rainy season the weather was rather indifferent; a dampish, cold atmosphere was the leading feature in the meteorological conditions which then prevailed. After a week's absence the detachment returned to the station, and the European officer lost no time in consulting me on account of frequent sneezing, "running at the nose" and eyes, headache, slight coughs, and pains all over the body, especially in the joints. His temperature was slightly raised—101° F.,—but showed no periodicity. He got over these troubles in a couple of days, but the cough and slight weakness of the system generally persisted for a little while after. At first sight I certainly regarded these symptoms as the effects of a severe touch of cold, but I had not long to wait before several others of the Europeans (eleven in number) in the Bremen Mission-house, chiefly those who had remained longest on the coast, were also attacked, and had to go through the same course of symptoms. The cases, however, which occurred among Europeans were mild, and no untoward effects resulted. Among the native community the incidence of the disease was excessive and virulent. Not less than twenty-five serious cases among the force in detachment were admitted into the constabulary hospital, but no death occurred. It spread like wildfire among the civil population. Several fatal cases were reported from intercurrent complications referable to the respiratory and nervous systems. Gastro-hepatic troubles were prominent features in some of the complicated cases. From all this it will be observed that the Europeans at Kwitta—especially those whose constitutions, from their prolonged stay on the coast, might have been looked upon as tolerant to the effects of Laveran's parasite—enjoyed no immunity from the disease, and that the natives (negroes), instead of suffering from the mild type, as suggested by Dr. Prout, were subjected to the virulent forms of the disease, which proved fatal in several cases.

I am, Sirs, your obedient servant,

B. W. QUARTEY-PAPAFIO, M B, M.R.C.S. Eng.,
Government Medical Officer.

Elmina, Gold Coast, West Africa, Oct. 18th, 1890.

COOKED OR UNCOOKED MEAT.

To the Editors of THE LANCET.

SIRS,—In reply to the questions in THE LANCET of Nov. 29th by your correspondent, Dr. Percy Baily, the following remarks may be made.

1 and 2. Practically, there is no discernible difference in the meat of English-fed and killed cattle as compared with foreign-fed cattle, whether killed in England or abroad. The enormous mass of foreign cattle, including pigs, which come to the United Kingdom from abroad, are specially fattened—chiefly on artificial foods—to suit the tastes of the English market. It is alleged that "forced artificial feeding makes the fat deposit in lumps apart from the muscles, whereas if naturally fed the meat assumes a somewhat mottled or marbled appearance by the fat being more evenly distributed throughout the animal's muscles." However, as regards this theory, I give it for what it is worth, doubting its accuracy. Home fed and bred mutton and beef are superior to foreign mutton and beef. However, the popular taste demands that veal, pork, and ham should be excessively fat; hence foreign veal, pork, and ham, as well as venison, being kept lean, are very superior to our home products. Veal and pork, when fattened as for the English market, are frequently unhealthy and indigestible. Italian, German, and Swiss veal and pork being muscular, and not subjected to the home processes of super-feeding, producing artificial fatty degeneration, are superior to their British representatives. Abroad the reputed mutton cutlet is frequently pork. 3. It appears that hitherto foreign and colonial fed cattle sent dry-air frozen to England can neither by chemistry nor the microscope be distinguished from home-fed and killed meat. It is a disgraceful fraud that dry-air frozen meat and poultry are often sold as and at the high rates or prices of home-fed and killed meat and poultry to the consumer. The retailer pockets this wide difference. Legislative interference should prohibit these augmenting abuses and scandals which sweat the British producer and practically starve the poor. It is an unjustifiable trade trick or blackmail levied on the rich and well-to-do classes.

I am, Sirs, yours truly,

J. LAWRENCE HAMILTON, M.R.C.S.

Burlington-street, Brighton, Nov. 29th, 1890.

BIRMINGHAM.

(FROM OUR OWN CORRESPONDENT.)

Scarlet Fever.

THE number of patients in the Borough infectious hospital has fallen to 457, from 528 in October, and the death-rate has fallen to 2·5 per 1000 per annum. This is a satisfactory omen, due probably to the accession of colder weather, and, though it still represents a large number, there is reason to believe that the epidemic is on the decline.

Ice Accidents.

The season brings its particular forms of disaster, among which the above-named form a prominent feature. A lamentable catastrophe has just happened at Tipton, where six children were drowned from the breaking of thin ice in a pool. In the Black Country it is impossible to prevent accumulation of water in deep holes owing to the mining operations of the neighbourhood, and these form veritable death traps when frosty weather sets in sufficiently to coat them over with ice.

Child Mortality.

Another form of fatality at this season is that due to burning. The coroner held five inquests on the bodies of children this afternoon, whose deaths resulted from

various causes, burning being prominent. Carelessness and want of proper supervision account for this sacrifice of young life, and unfortunately the lessons taught do not seem to diminish the number of casualties, which are constantly happening from similar defects.

Hospital Reform Inquiry.

At the last sitting of this committee a proposal was made to divert the Hospital Saturday Fund from the hospitals to a large provident dispensary which should undertake the out-patient work of the hospitals. It was stated that this was done at Leicester with success. Also that, as the working-men largely contributed to this, they had a claim to recognition in a manner which would at once give them the best chances of relief, and be a source of reducing the overwhelming pressure now existing at the hospitals. The subject is one for due deliberation and thorough inquiry.

Birmingham, Dec. 10th.

NORTHERN COUNTIES NOTES.

(FROM OUR OWN CORRESPONDENT.)

Dr. Koch's Treatment of Tuberculosis at the Royal Infirmary, Newcastle.

TO-DAY the profession of the Northern Counties were afforded, through the courtesy of the staff of the Newcastle Royal Infirmary, an opportunity of witnessing Dr. Koch's treatment for tuberculosis. It is right to say that the provision made for the reception of their visitors by the staff were of the most complete and satisfactory nature, also the selection of the typical cases was most judicious. Dr. Philipson, in some introductory remarks, said that the lymph was presented to the infirmary by Dr. John Rutherford of this city, who had it from Dr. Koch. Dr. Rutherford then, with the assistance of Professor Bedson, diluted the liquid to the desired standard, and it was used in the following cases on Tuesday:—1. A case of tubercular lupus in a boy aged ten, under Dr. Philipson, the fluid being injected by Dr. Arnison. On Wednesday the temperature rose to 103·8°, the glands were tender, and the lupus patches altered in appearance. 2. Case of chronic tuberculosis of left lung in a lad aged seventeen, with a bad family history, under the care of Dr. Drummond; injected by Dr. Hume. No reaction took place in this patient. 3 Case of tubercular disease of elbow in a woman aged twenty-six, under the care of and injected by Dr. Hume. The joint on Wednesday was hot, and the temperature was slightly higher. 4. Case of tubercular glands of neck in a girl aged fifteen, under the care of Mr. G. E. Williamson, who also injected the fluid. The maximum temperature attained was 103·4°, and the glands have become tender. The patient has assumed an expression of anxiety. There is little to be said about the injections, the dose given being generally one milligramme, which was injected between the scapulæ, and appeared to give no pain. On the conclusion of the treatment of the cases, Dr. John Rutherford exhibited the lymph and the apparatus used, and explained its doses in various forms of diseases and its mode of dilution. This portion of the demonstration was of the greatest interest, and the demonstrator received the well-deserved thanks of the large assembly. A vote of thanks to the honorary staff of the Royal Infirmary brought the proceedings to a conclusion. I saw all the patients in the evening, about seven hours after their injection with the liquid, and they exhibited well-marked reaction, characterised by rise of temperature, increase in pulse and respiration, and some occipital and frontal headache. The most well-marked changes with a rigor were observed in Case 1, being a case with lupoid eruptions and ulcers on the face and arms; these changes might be characterised as injection and swelling of the sores, especially in the circumference and raised tubercles of the ulcers, at the same time some weeping of fluid or serum was seen, as from small bullæ. The treatment was witnessed by about 300 practitioners and students, many of the latter coming from a considerable distance, such as York, Carlisle, and other towns on the Scottish border, not a few of whom remained all night to witness the progress of the cases. I have already spoken of the good arrangements made for all visitors; but especially, as the representative of THE LANCET, I have to thank Dr. Drummond and Dr. Baigent (the house physician) for the favourable position in which I was placed, and so was enabled to make these notes for your readers.

Newcastle-on-Tyne, Dec. 9th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

The Medico-Chirurgical Society of Edinburgh.

ON Wednesday of last week this Society held one of the largest meetings it ever had, the hall being crowded in every part. The first item on the billet was the presentation of a patient by Mr. A. G. Miller, on whom trephining had been performed for the relief of epileptic seizures following an injury to the head. The operation was successful and the fits had ceased. Dr. R. W. Philip then made his communication on Personal Impressions of the Koch System for Tuberculosis, and referred to the cases which had been injected with the liquid he had brought with him from Berlin. Professors Grainger Stewart, Gairdner, Chiene, and Dr. Brakenridge made remarks on the subject. Dr. W. Russell thereafter read his paper on the Characteristic Organism of Cancer, which he illustrated by means of diagrams and a microscopic demonstration. After some remarks from Dr. Styles, the discussion of this paper was, on the motion of Dr. A. Bruce, postponed until the next meeting of the Society.

Koch's Treatment at the Royal Infirmary, Edinburgh.

The effects of this treatment are being closely watched on a number of patients in the Royal Infirmary. The results so far confirm Koch's statements. Special facilities have been afforded to members of the profession to see these cases. Dr. Philip, who is one of the assistant physicians to the Royal Infirmary, brought the fluid from Berlin, and the patients under treatment are in Professor Grainger Stewart's and Dr. Brakenridge's wards on the medical side, and in Professor Chiene's on the surgical side of the hospital.

Edinburgh Public Health Lectures.

Dr. Philip was the lecturer on Saturday, having for his subject "Consumption: how to get it and how to get rid of it." He strongly advocated the necessity of obtaining a hospital for consumptive patients in or near the city.

Health of Edinburgh.

The mortality last week was 90, making the death-rate 17 per 1000. Diseases of the chest accounted for 33 deaths and zymotic diseases for 10; of these, 3 were cases of typhoid, 3 of diphtheria, 1 of scarlatina, 1 of whooping-cough, and 2 of erysipelas. The intimations for the week were: 17 cases of typhoid, 4 of diphtheria, 26 of scarlatina, and 7 of measles.

Koch's Fluid in Glasgow.

Some of Koch's fluid has reached Glasgow, and has been used in all three infirmaries, with varying effect. The three gentlemen sent to Berlin by the Royal Infirmary came home with much experience of cases treated by Koch's method, but without the liquid; but, as the result of an appeal made to the Empress Frederick, a phial of the precious fluid was sent to Glasgow after them. On Sunday last several patients were inoculated by Drs. Wood-Smith, Steven, and Workman, and since then demonstrations and lectures have followed each other in rapid succession, all of them attended by crowds of students and medical men.

In the Victoria Infirmary Dr. Napier, who has been fortunate enough to obtain a small supply of the fluid, also injected five patients on Sunday last, in the presence of a large number of medical brethren. These cases were shown at demonstrations on Monday and Tuesday. The cases treated were two of tubercular disease of the joints, and in these the reaction was extremely marked, the temperature rising, and the parts becoming red and swollen and tender. Two were phthisis, which reacted well, more especially one case, in which physical signs of tubercular infiltration became manifest in a lung where its presence had not before been detectable. The sputum in these cases contained numerous bacilli. A case of "lupus verrucosus" did not react, raising the suspicion that possibly this

disease is erroneously included among the tubercular skin diseases, and is not really a true lupus. One point made out very clearly was that in venereal cases the temperature fell very markedly (twice to nearly 96° F.) before it rose during the reaction. I am not aware that this point has been noted before. Another case of true lupus of ten years' standing was injected on Tuesday by Dr. Napier. A dose of 0·006 of the fluid was used. There was violent reaction, the temperature running up to 104°F., and the patches of eruption being surrounded by a broad belt (three-quarters of an inch) of acute inflammation. To-day the temperature is down to 102°F., but the inflammation of the patches continues.

At the Western Infirmary an interesting demonstration was given to an enormous audience by Professors McCall Anderson and Gairdner. The cases treated were lupus and phthisis pulmonalis. Nothing has yet been learned as to the occurrence of reaction in these cases.

Professor Dunlop on the Shark, and on Dissection for Non-medical Students.

On the 24th ult. Professor James Dunlop gave a most instructive lecture on the Shark in the Anatomy lecture-room in Anderson's College Medical School, demonstrating his subject on the carcase of a large shark recently captured in Loch Fyne. The audience, which was large, appreciative, and apparently deeply interested, had an opportunity of inspecting the class-rooms, museums, and laboratories of the school. In the course of his introductory remarks, Professor Dunlop made the striking suggestion that students of natural history, even if not preparing for the medical profession, might very appropriately engage in the dissection not only of fish and the lower animals in general, but also of man. This opens up quite a new prospect for the student both lay and medical, and it remains to be seen how it is received by the public on the one hand and by medical students and teachers on the other. If the suggestion be widely adopted, it will cause the dissecting-rooms of our various schools to be put to quite a new use.

December 9th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

Professor Koch's Treatment of Tuberculosis.

ON Tuesday, the 9th inst., the staff of the Richmond Hospital gave a demonstration of Koch's treatment to a large number of the medical profession in the theatre of that institution. Mr. Thomson, after some introductory remarks, exhibited a young woman suffering from tubercular disease of the knee-joint of some ten years' standing, and for which recently he had intended to perform amputation. On Saturday last two milligrammes of the fluid (equivalent to about three minims of a 1 per cent. solution) were injected at the usual site, but no reaction took place until late that evening, when she had a severe rigor, headache, nausea, &c., the temperature rising to 101°, gradually falling; it again rose as high as 101·2°. There was increased tension in the joint, a certain amount of tenderness, and slight increase in size. There was present an erythematous eruption of the side of the neck and face. Having mentioned these details, Mr. Thomson injected four milligrammes of the fluid. He was followed by Mr. Thornley Stoker, who exhibited several patients, in one a local action occurring without any constitutional effect. A child with scrofulous disease of the elbow was shown where excision and gouging had been used. This patient the preceding day had been injected with a dose of two milligrammes; the temperature at this time was 97·2° in axilla, but at 12 o'clock it rose to 101·5°, falling every third hour; there was no local reaction, the dose being so small. Some cases of lupus were also exhibited. Dr. O'Carroll also exhibited two cases under his care which were being treated by Koch's method.

At the Mater Misericordiæ Hospital demonstrations by Koch's method have been given each morning; and Dr. McKee will early next week give a lecture at the Royal College of Surgeons, when patients will be exhibited and the address will be illustrated by limelight.

At the Meath Hospital Sir William Stokes, who has recently returned from Berlin, last week gave a lecture on the subject, and afterwards treated two patients, one suffering from tubercular enlarged glands, and the other from phthisis, by injections of Koch's liquid.

Serious Illness of Dr. John Byrne of Dublin.

I regret to hear that this gentleman has been seriously indisposed for some time past, and that considerable anxiety is felt by his friends as to his condition.

Ether Drinking.

The Privy Council has approved of the resolution of the Royal College of Physicians declaring sulphuric ether to be a poison, and subject to the regulations dealing with the sale of poisons in Ireland.

The Ulster Medical Society.

One of the most enjoyable reunions which has been held in medical circles in Belfast for several years took place on Wednesday evening, Nov. 26th, upon the occasion of the annual dinner of the Ulster Medical Society in the Royal Avenue Hotel. The President of the Society (Dr. Dempsey) occupied the chair, and forty-two members were present. After dinner the following toasts were proposed: "The Queen and the other Members of the Royal Family," proposed by the President; "The Lord Lieutenant and Prosperity to Ireland," given by Mr. McConnell, and replied to by Professor Dill. Mr. McFarland, A.M.D., proposed "The Belfast Medical School," to which Professor Cuming and Dr. Byers replied. "The North of Ireland Branch of the British Medical Association" was proposed by Mr. Fagan, and Dr. M'Keown (president) acknowledged the toast. "The Ulster Medical Society" was given by Professor Whitla, and replied to by Dr. Dempsey, president. An admirable programme of music was given by the following gentlemen: Dr. J. A. Lindsay, Mr. Mackenzie, Dr. M'Caw, Dr. Leslie, Dr. Lewers, Dr. McKisack, and Dr. Kevin. Too much praise cannot be given to Dr. M'Caw, the hon. secretary of the Ulster Medical Society, for the marked success of this last annual dinner, which was due to his untiring exertions.

The Guinness Fund Trustees have accepted a tender for the erection of 120 single-roomed tenements in Thomas-court, Dublin; and arrangements are being carried out for the acquisition of other sites in Dublin.

Dr. Henry Fitzgibbon has been appointed by the Lord Chancellor a Medical Visitor in Lunacy in the vacancy created by the decease of Dr. Corley.

December 9th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Koch's Remedy.

AN important communication was made to the Société Médicale des Hôpitaux on the 5th inst. by MM. Thibierge, Ferrand, and Cuffer, who had just returned from Berlin, where they had repaired in order to study the effects of Koch's fluid on lupus, the general system, and the respiratory organs respectively. While admitting the more intense and persistent character of the local action than that excited by intercurrent erysipelas in this disease, M. Thibierge states that the system becomes rapidly tolerant of even increasing doses of the liquid, and that after two months' treatment the characteristic nodules were plainly discernible, proving that the malady is not eradicated. He suggests that bacteriological research and experimental inoculations on animals would confirm this clinical fact. M. Ferrand opines that the liquid acts as a pyrotogenous agent on the system at large, and as a paralyser of the muscular coats of the arteries, especially those contained in the tissues invaded by the bacillus. He endorses the views of Ewald on the contra-indications of the treatment. These are: (1) considerable generalisation of the lesion; (2) pronounced debility; (3) the hæmorrhagic variety of phthisis. M. Cuffer recalls the phenomenon of hypothermy observed in several instances to have preceded the usual febrile ascent. He divides the phenomena of reaction into two classes—congestion, and acceleration of the tubercular process. In support of this latter statement he cites the case of a woman in Senator's wards, who, ten days after the commencement of the treatment, succumbed to acute phthisis

provoked by the injections. At his second lecture at the Hôpital Laennec on Sunday last, on the results of Koch's treatment as applied by him at that institution, Professor Cornil announced that, at Professor Peter's request, the question of the liability of practitioners to an action for damages in case of death after inoculation, and also that of prosecution at the instance of any chemist for the administration of an unauthorised remedy, was to be submitted by the Dean of the Faculty to the legal advisers of the Committee of Hygiene for decision. Professor Cornil has noted three cases of hæmaturia, with blood-casts, and albuminuria, lasting several days as a result of injections. In a case of tubercular epididymitis and prostatitis an injection caused the epididymis to double in volume, the prostate remaining unaffected.

A Seasonable Reminder.

It is refreshing to read in the *Semaine Médicale*, alongside of voluminous articles on Koch's remedy, the report of a lecture by that veteran opponent of Pasteurism, Professor Peter, on the beneficent effects of blistering, local and general, bleeding and counter irritation in cases (cited) of perityphlitis, puerperal eclampsia, dyspnœa from caseous bronchial glands, and congestive paraplegia. Such a reminder surely serves a useful purpose.

The New Medical Bill and Foreign Practitioners.

The Parliamentary Committee appointed to report on the new Bill have pronounced against the retention of the Article authorising foreign practitioners accompanying their patients to French health resorts to practise without having obtained a French medical degree.

The Water-supply at Schools.

The Minister of Public Instruction has addressed a circular to all rectors of French academies, calling their attention to the dangers attending the supply of contaminated water to the scholars of both sexes in playgrounds and refectories. These officials are requested to report to the Minister on the source, mode of conveyance, and chemical composition of the water consumed at *lycées*, colleges, and schools, as also the kind of filter employed in such establishments.

The Preservation of Corpses.

Six or seven years ago two women were murdered at Lyons, one while asleep, and the other after a desperate struggle with the assassin, who was never discovered. As a precautionary measure, the expert, M. Ferrand, injected the bloodvessels previously to interment with an antiseptic solution. Recently these corpses were exhumed, and in one the expression noticed immediately after the commission of the crime was remarkably preserved. Both the bodies were in an almost perfect state of preservation.

Composition of Koch's Liquid.

Le Matin of this morning publishes, on the authority of an anonymous *savant*, a recipe for the preparation of this mysterious liquid. It is as follows:—The liquid is a solution in glycerine of a ptomaine secreted by the bacillus of tuberculosis in bouillon culture. The bouillon is first sterilised, and then precipitated by cyanide of gold, the result being the formation of a double salt of gold and the insoluble alkaloid. This double salt, collected on a filter, is decomposed by baryta or some other alkali. The alkaloid (ptomaine) is then dissolved in glycerine, the resulting solution constituting the famous liquid of Robert Koch.

The Consultative Board of Health on Tuesday adopted almost unanimously a resolution to the effect that it was expedient in the interests of science that experiments for testing the efficacy of Dr. Koch's liquid should continue to be made in France.

Paris, Dec. 9th.

VIENNA.

(FROM OUR OWN CORRESPONDENT.)

Koch's Treatment.

SINCE my last report some new cases have been subjected here to the anti-tuberculous treatment. At Professor Kahler's clinic four new patients, all suffering from tuberculosis of the lungs, were submitted to the treatment, and showed general reaction as well as the local one. At this clinic, in all the cases, numbering now twenty-five, the action of the fluid was similar to what has been described by the Berlin physicians. Besides these, three patients suffering from various nervous diseases were injected, and showed no reaction at all. At the third clinic for internal diseases of Professor Schroetter eleven patients have been submitted to the treatment, among them three cases of tuberculosis of the larynx, which showed only a slight local and a well-marked general reaction, the other cases being patients with tubercular lungs. Only two of the latter exhibited the well-known phenomena, while in others only slight symptoms of a reaction (giddiness, prostration, pains in the chest and in the limbs) without a rise of temperature could be observed. In some of the patients the injection of even 2 milligrammes did not produce any effect; so that the physicians there have resolved to change the *locus injectionis*, and will try now injections made in the mammary region of the breast in place of the back. At Professor Kaposi's clinic for skin diseases, besides the twenty-one patients mentioned in the last number of THE LANCET, five new cases have been submitted to the injections. Among them was one case of lupus vulgaris of the nose, which showed no reaction at all after the injection of 5 milligrammes. The same negative results were obtained in a case of epithelioma, and in a patient affected with psoriasis communis. One of two patients suffering from secondary syphilis who were injected showed a well-marked general reaction, the temperature rising to 39° C. (102·2° F.), and locally a swelling of the mucous membrane of the fauces occurred. At Professor Neumann's clinic for skin diseases six cases of lupus are now under Koch's treatment. All showed the well-known reaction. One of these cases was especially interesting, as the lupoid affection was combined with an orchitis of syphilitic origin and with a tubercular epididymitis. There could be observed a considerable swelling of the epididymis after the injection, while the testicle itself remained totally unchanged. In a case of pustular syphilide, and in another of psoriasis vulgaris, the injections did not produce any effect; while a case of syphilitic gumma was reacting with a fever of 39° C. and slight local swelling. Professor Neumann called my attention also to the fact that in the reacting cases of lupus, besides the already described morbilli and scarlatina-like exanthema, a not yet described bullous eruption may be observed, and that the scars formed occasionally become moist. In the wards of Dr. Standhartner ten patients suffering from pulmonary tuberculosis were treated by injections, but only two of them exhibited the reaction; while in the others only a slight reaction, and in some of them no reaction at all, could be observed. At the last meeting of the Vienna Society of Physicians Dr. Riehl showed microscopic preparations made from tubercular tissue excised after the injection of Koch's lymph. It was taken from a case of tubercular ulcer of the skin of the stump formed after amputation of the leg (performed for caries) in a patient aged fifty-three. The histological changes consist of an increase in the number of the leucocytes and in the round cells in the neighbourhood of the tubercles and the small bloodvessels, and of a fibrinous infiltration of tissue surrounding the tubercles, pointing to the presence of an acute inflammation, which was believed by Dr. Riehl to be the first effect produced by the injection. At the same meeting Professor Kaposi reported his observations regarding the action of Koch's remedy, and alluded to the fact that at his clinic non-tubercular patients had shown the symptoms of reaction after the injections; he gave also the advice to be very cautious with regard to the intervals between the various injections, as he had occasion to observe very alarming symptoms (fever of 41° C. and coma) in a case of lupus in which a second injection had been made three days after the first. The opinion of Professor Kaposi that Koch's liquid has a cumulative action has been, however, contradicted by Dr. Kraus, the assistant of Professor Kahler, who states that though patients had now been injected repeatedly even with doses up to one centigramme at his clinic he had not yet observed any bad effect.

Further Clinical Observations.

At Professor Billroth's clinic some further cases of surgical interest were injected last week. At the Policlinic five cases of lupus vulgaris were treated by Koch's method. In two cases of boys, aged twelve and fourteen years respectively, besides the usual symptoms, swelling of the lymphatic glands in the inguinal, axillary, and sub-

scapular regions occurred, which lasted for some time. There seems no doubt that Koch's fluid has a specific action on a series of products of chronic inflammation, and it is doubtless, as I have had the opportunity of observing, a most powerful and efficacious expectorant remedy in cases of tuberculosis of the lungs. At present it would be rash to form a judgment as to the real value of Koch's remedy as a diagnostic or curative agent. Scepticism begins to spread among the Austrian physicians, and it is strengthened by the report made to the chief Sanitary Council (Oberste Sanitäats-rath) by its delegates, Professors Drasche and Weichselbaum, on their Berlin observations. At the last meeting of this Council it has therefore been resolved that any treatment of out-door patients with Koch's fluid should be prohibited in Austria, and that physicians who wish to make the injections in private practice should be compelled to notify every case to the political magistrate of their respective districts, and to prove the source from which the fluid used has been obtained. It is expected that an official order containing these regulations will be issued this week by the Austrian Government, a measure which has already met with opposition in medical circles, and some of the leading medical societies here have already passed resolutions protesting against such an intended restriction of professional work. As I am informed an Austrian professor has commenced now to make experiments on the action of the liquid in animals made tuberculous artificially, and it is hoped that the results will soon be published, as observations on animals where post-mortem examinations could easily be made would throw more light on the yet occult action of Koch's remedy.

Obituary.

ANTHONY HAGARTY CORLEY, M.D., F.R.C.S., OF DUBLIN.

ON the 1st inst., after a short illness, this well-known and highly esteemed member of the profession died at his residence, Merrion-square, aged fifty years. He was educated at the Ledwich School of Medicine, Adelaide Hospital, and Queen's College, Galway. He obtained the licence in Surgery of the Royal College of Surgeons in Ireland in 1861, and the Fellowship in 1865. He graduated in Medicine in the Queen's University in Ireland, obtaining first honours and a gold medal. After lecturing for some time on Anatomy at the Carmichael School he was appointed Lecturer on Surgery in the same institution, and last year, when that school was amalgamated with the Royal College of Surgeons, he was chosen as one of the professors of surgery. He examined in surgery at the Queen's University for some years, and on the Royal University taking its place he was elected an Examiner in Surgery, and afterwards a Fellow. From the Queen's University he received the degree of Doctor of Science *honoris causâ*, and from the Royal University that of Master in Surgery *honoris causâ*. He was a member of Council of the College of Surgeons, being elected President in 1885, and was surgeon to the House of Industry Hospitals. Among his contributions to medical literature may be enumerated "Temperature in Spinal Diseases," "Fracture of the Skull," and "Injuries of the Head" in "Treves' Manual of Surgery." Dr. Corley, who was greatly liked, leaves a host of friends, and a wife and several children, to lament his premature decease.

At the meeting of the Council of the Royal College of Surgeons in Ireland on Dec. 4th the following resolution was unanimously adopted:—"That this Council has heard with profound sorrow the death of their colleague, Dr. Anthony Corley, Past-President and Professor of Surgery in this College, who so recently was amongst them an active worker in the interests of the College. The Council desires to place on record its deep sense of the great loss which has been incurred by the profession in Ireland of which Dr. Corley was so eminent a member. The services which he rendered to the College, the devotion which he always exhibited in the discharge of his public duties, and the help that he gave to the development of scientific surgery, all serve to make his death a grave calamity. The Council at its first meeting beg to tender to his wife and children their respectful and warm sympathy in this sad bereavement, which has deprived them of their protector."

DAVID REID MCKINNON, M.B., C.M. ABERD., F.R.C.S. ENG.

DR. MCKINNON died at Belize, British Honduras, on Oct. 4th. He was the eldest son of Surgeon-General D. R. McKinnon of the Army Medical Service, and was born at St. Lucia, West Indies, in 1861. Educated at the Grammar School of Aberdeen, and the University, he entered upon the study of medicine at Marischal College in 1878, and, after a distinguished undergraduate career, took the degrees of M.B., C.M. with honours in 1882. For two years afterwards he held successively the offices of house surgeon and house physician at the Royal Infirmary, Aberdeen. Proceeding to Vienna in 1884, he spent a year there in the study of continental methods, paying particular attention to various branches of medicine and surgery. In 1885 he came to London and joined the River Ambulance Service of the Metropolitan Asylums Board during the small-pox epidemic of that year. On the subsidence of the epidemic he was appointed medical officer at Bethnall House Lunatic Asylum. During the three years of his connexion with the asylum he took advantage of every opportunity of extending his clinical experience, attending the practice of the London Hospital, and for some time holding the post of clinical assistant at the Royal Ophthalmic Hospital, Moorfields. In 1888 he obtained the diploma of Fellow of the Royal College of Surgeons of England. In March of last year he accepted an offer to join a practice in Belize, British Honduras, where he proceeded in the same month. For the last year yellow fever has been rife in that colony, and Dr. McKinnon devoted himself with his wonted enthusiasm to the care of his patients and to the close study of the disease. On Sept. 26th he himself showed symptoms of fever, at first resembling those of bilious remittent fever, but soon developing the characteristic features of the more deadly malady. At the end of a week he so far improved that a hopeful prognosis was given by several physicians familiar with the course of yellow fever; but on the night of the 3rd ult. pneumonia supervened, and he rapidly lost consciousness and died on the morning of the 4th. The news of his death came as a great shock to his numerous friends in London and Scotland. Few men had the faculty of attaching friends in the same degree as David McKinnon, and there are many to mourn the untimely closing of his promising and brilliant career and the loss of a steadfast and valued friend.

ROYAL COLLEGE OF SURGEONS.

AT an ordinary meeting of the Council on Dec. 11th the minutes of the previous meeting, including a resolution to remove a practitioner in Sydney from being a member of the College, were read and confirmed.

A report from the committee on the Rules relating to Voting Papers for election to the Council was read and confirmed, it being decided that no change was to be recommended, and steps were taken to acquaint the Fellows of the College forming the deputation received on Oct. 30th last of this decision.

A report from the Committee of Management relating to the determination of institutions to be recognised as giving adequate instruction for the purposes of a Public Health diploma was approved and confirmed subject to the approval of the Royal College of Physicians.

The President stated that, in reply to an inquiry from the Registrar of London University agreeing to the scheme for reorganisation of the University, he had expressed an opinion that no advantage would be gained by any further conference between the two Colleges; but that, if desirable, the delegates of the College of Surgeons were prepared to discuss the matter further with the Committee of the Senate.

The action of the President having been approved and confirmed, a report from Mr. Marshall, President of, and representing the College of Surgeons on, the General Medical Council, was received, recording the proceedings of the latter body, and a unanimous vote of thanks was accorded to Mr. Marshall for his services.

The Council then adjourned.

Medical News.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.—The following gentlemen, having passed the necessary Examinations and conformed to the by-laws and regulations, were at an ordinary meeting of the Council on the 11th inst. admitted Fellows of the College:—

Coumbe, John Batten, M.D. Brux., Twyford; date of Membership July 30th, 1877.
Collins, Ed. T., L.R.C.P.Lond., Finsbury-circus, May 18th, 1883.
Caldwell, R., L.R.C.P.Ed., Colchester; July 23rd, 1883.
Evans, W. H., M.D.Lond., Westbourne-park; July 25th, 1883.
Blight, W. Lyne, M.D.Durh., Diss, July 31st, 1884.
Williams, C., L.R.C.P.Lond., Welbeck-street; Jan. 22nd, 1885.
Barendt, Frank Hugh, M.D.Lond., Liverpool; April 23rd, 1885.
White, F. F., L.R.C.P.Lond., Coventry; Aug. 3rd, 1885.
Staveley, W. H. C., L.R.C.P.Lond., Lambeth-palace-rd., Jan. 27th, 1886.
Clarke, J. J., M.B.Lond., Harewood-street, Oct. 20th, 1886.
Murray, J., M.B.Dub., Middlesex Hospital; Jan. 17th, 1887.
Braine, C. C., L.R.C.P.Lond., Maddox-street; Nov. 10th, 1887.
Cheatle, G. L., L.S.A., Carlisle Mansions; Nov. 10th, 1887.
Collier, H. S., L.R.C.P.Lond., St. Mary's Hospital; Feb. 9th, 1888.
Da Costa, F. X., L.R.C.P.Lond., Eccleston-square; Feb. 9th, 1888.
Mothersole, R. D., L.R.C.P.Lond., Liverpool; Feb. 9th, 1888.
Colby, J. G. E., M.B.Oxon., Malton; May 10th, 1888.
Parkinson, John Porter, M.D. Lond., Blackburn; May 10th, 1888.
Beale, P. T. B., L.R.C.P. Lond., Grosvenor-street; Feb. 12th, 1889.
Barratt, John O. W., M.B. Lond., Birmingham; not a member.
Morison, J. R., M.D. Edin., Newcastle-on-Tyne; not a member.
Peters, G. A., M.B. Toronto, Med. Coll. Toronto; not a member.

Thirty-nine candidates presented themselves for examination, twenty-five of whom acquitted themselves satisfactorily (including three candidates who have not yet attained the legal age of twenty-five years, and will therefore be admitted Fellows at future meetings of the Council); twelve candidates were referred for six months, and two for one year.

The following gentleman, having passed the necessary examinations and conformed to the bye-laws and regulations, was at the same meeting admitted a Member of the College.

Lewis, Albert Cornewalle, L.S.A. (Univ. Coll. Hosp.), Brynamman, Carmarthenshire.

SYPHILIS IN RUSSIA.—The Russian Government has appointed a committee, consisting of Professor Tarnovski and other syphilologists, to adjudicate the award offered for the best popular work on the dangers of syphilis, and on prophylactic measures for preventing its spreading.

BRITISH LARYNGOLOGICAL AND RHINOLOGICAL ASSOCIATION.—At the annual meeting on Nov. 28th the following were elected office-bearers:—President: Dr. Hunter Mackenzie, Edinburgh. Vice-Presidents: Dr. Dundas Grant, London; Dr. MacIntyre, Glasgow; and Dr. Sandford, Cork. Council: Mr. Mayo Collier, Mr. Lennox Browne, Mr. Howell, Dr. Wolfenden, Dr. Bronner, and Dr. Hunt. Secretary: Dr. George Stoker.

COTTAGE HOSPITALS.—At Driffield, during the past year, forty in-patients and fifty-seven out-patients received the benefits of this institution. The income from all sources amounted to £266 18s.—At Mexborough, the hospital has been opened twelve months, and its need in this populous neighbourhood has been demonstrated by upwards of ninety patients having been treated during the year.

MR. W. F. R. WELDON, M.A., F.R.S., Fellow of St. John's College, Cambridge, has been appointed by the Council of University College, London, to the Jodrell Professorship of Comparative Anatomy and Zoology, which was held for sixteen years by Professor Ray Lankester. Mr. Weldon at present is a Lecturer on Invertebrate Morphology to the University of Cambridge. Mr. F. E. Weiss, B.Sc., has been elected to the Quain Studentship in Botany; and Mr. T. W. P. Lawrence, M.B., F.R.C.S., has been appointed Curator of the Anatomical Museum.

FOOTBALL CASUALTIES.—Mr. H. M. Walters died on the 27th ult. from injuries received in a match between the Casuals and St. Bartholomew's Hospital at Wormwood Scrubbs on the 12th ult.—On Nov. 29th a member of the Royal Arsenal Club at Woolwich, whilst playing at football, sustained a fracture of the leg.—At Newport on the same day, in a match between Newport Second against Cardiff Second, a player sustained a compound fracture of the right leg.—During a Rugby match at Greenwich Park on the 3rd inst., between the Royal Naval College and East Sheen Clubs, Mr. Budgett broke one of his legs.

LITERARY INTELLIGENCE.—We have been given to understand that on and after the first week in January *The Publishers' Circular* will appear weekly instead of fortnightly, having been published twice a month for fifty-three years.

A GIFT TO NOTTINGHAM.—It is stated that Colonel Seely, the present High Sheriff of Nottingham, and formerly M.P. for the borough, has given £10,000 towards establishing convalescent homes and a hospital for poor inhabitants in that town.

PRESENTATION.—Dr. W. A. Macnaughton, of Walker-on-Tyne, on his leaving the district (having been appointed medical officer of health for the county of Kincardineshire) has been presented by his friends, as tokens of their esteem, with a handsome microscope, a gold Albert chain and locket, and a set of gold studs.

MEDICAL MAGISTRATES.—The name of Frederic Edward Manby, F.R.C.S. Eng., and Deputy Mayor of Wolverhampton, has been added to the Commission of the Peace for that county borough.—Mr. J. E. Barnes, M.R.C.S. (1856), L.S.A., has been made a Justice of the Peace for the county of Suffolk.

VOLUNTEER AMBULANCE SCHOOL OF INSTRUCTION. In the individual competition the following men tied for first position: Corporal Fraser, Sergeant W. H. Ford, Gunner Hicks, and Lance-Corporal Podmore. The first winning detachment consisted of Private W. J. Turner, Lance-Corporal D. Podmore, Sergeant W. P. Armstrong, and Private Hughes. This detachment were awarded 110 marks out of a possible 120.

FATAL FIRE AT A PRIVATE LUNATIC ASYLUM.—A fire broke out last week in the linen-room of a private lunatic asylum, kept by Mr. W. M. Hamer, at Hawkhurst, Kent. The fire brigades of Goudhurst and Cranbrook were soon on the spot, but the building was completely destroyed. Many of the inmates were rescued with great difficulty, and a lady perished in the flames. The rescued inmates were removed to Dr. Newington's Asylum at Ticehurst.

INFIRMARY MEDICAL SUPERINTENDENTS' SOCIETY. The usual monthly meeting of this Society was held at Lambeth Infirmary on Nov. 29th, when a series of interesting cases was shown to the members by the medical superintendent, Dr. R. H. Lloyd. This included a case of tetanus of some days' duration, occurring in a boy aged ten, and a favourable prognosis was given. The clinical meeting was followed by a discussion on various matters connected with infirmary administration.

BIRKENHEAD HEALTH COMMITTEE AND FEVER.—The Health Committee of the Town Council of Birkenhead have decided to make an acknowledgment of the services of Drs. Brewer and Pinkerton during the recent fever epidemic, and also to compensate them to some extent for the losses sustained by them during their illness. Dr. Brewer has been awarded £75, and Dr. Pinkerton £50. The expenses connected with Nurse McCoy's funeral will also be defrayed by the committee.

MORLEY HOUSE CONVALESCENT HOME.—A deputation of working men was introduced by Mr. Hamilton Hoare to the Lord Mayor on Saturday afternoon for the purpose of interesting him in an effort to raise £2000 to make an addition to this Convalescent Home. The Lord Mayor expressed his sympathy with the work, and believed it would not be a matter of much difficulty in raising the sum required. He promised to preside at a public meeting in aid of the Home in the early part of next year. The deputation thanked his lordship and departed.

BRITISH NURSES' ASSOCIATION.—The annual conversazione of this Association was held on the 5th inst., in Princes' Hall, and in the galleries of the Royal Institute of Painters in Water Colours, Piccadilly, when about 1000 members and their friends were present. The nurses appeared in uniform. The guests were received by Sir Dyce Duckworth, Mr. Pick, and Miss Thorold (matron at the Middlesex Hospital). Having inspected the picture galleries, the company adjourned to the lower hall, where refreshments were served, and where some entertainments were given. Among those present were many of the leading medical and hospital authorities in the metropolis.

METROPOLITAN ASYLUMS BOARD.

Return of Patients remaining in the several Fever Hospitals of the Board at midnight on December 9th, 1890.

Hospital.	Beds occupied.						Total accommodation.
	Scarlet fever.	Diphtheria.	Typhus fever.	Enteric fever.	Other diseases.	Total.	
Eastern Hospital	294	50	..	74	5	423	442
North-Western Hospital	307	34	..	15	1	357	443
Western ,,	162	18	..	17	2	199	262
South-Western ,,	219*	4	..	..	..	223	340
South-Eastern ,,	254	45	1	57	1	358	462
Northern ,,	374	28	..	16	..	418	480
Gore Farm ,,	214	..	..	..	..	214	300
Totals	1824	179	1	179	9	2192	2729

* 1 infant and mother.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward it to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week for publication in the next number.*

ALEXANDER, W., M.B., C.M. Aberd., has been appointed Parochial Medical Officer for Tarland and Migvie, Coull and Logie Coldstone, Deeside.

ASHBY, A., M.B. Lond., F.R.C.S., has been reappointed Medical Officer of Health for Reading.

BLACK, J. URQUHART, M.B., C.M. Aberd., has been appointed House Surgeon to the Royal Westminster Ophthalmic Hospital, vice R. B. Ferguson, resigned.

BROWN, W. H., F.R.C.S. Irel. M.R.C.S., has been appointed Honorary Surgeon to the Leeds General Infirmary, vice McGill.

CRAN, GEO., M.D., M.B., C.M. Aberd., has been appointed Parochial Medical Officer for Kincardine O'Neil, Deeside.

DEWAR, D. M., M.B., C.M. Glasg., has been appointed Assistant Surgeon to the Royal Infirmary, Glasgow.

DICKSON, G. W., M.B., C.M. Edin., has been appointed by the Perthshire County Council Medical Officer for the Dunkeld District.

EAST, C. H., M.B. Durh., M.R.C.S., has been appointed Medical Officer for the Shepforth District of the Monmouth Union.

FITZGIBBON, H. M.D. Dub., L.K.Q.C.P., F.R.C.S. Irel., has been appointed Medical Visitor of Lunatics, vice Corley, deceased.

GOODFELLOW, J. A., M.B., M.Ch. Glasg., has been appointed Medical Officer for Brampton, of the Chesterfield Union.

GOULD, J. E., L.R.C.P. Lond., M.R.C.S., has been appointed Resident Medical Officer to the Sheffield Fever Hospital.

GREEN, FRED. J., B.A., M.B., B.A.O., B.Ch. Dub., has been appointed Assistant House Surgeon to the Public Hospital and Dispensary, Sheffield.

HENRY, WM., M.D., M.B., C.M. Aberd., has been appointed Parochial Medical Officer for Cluny, Deeside.

HOGARTH, B. W., M.R.C.S., L.R.C.P., has been appointed House Surgeon and Secretary to the Hospital, King's Lynn, vice Bulman.

HORSLEY, REGINALD E., M.B., F.R.C.S. Edin., has been appointed Aurist to the Edinburgh Deaf and Dumb Institution.

JEEVES, JOHN, L.R.C.P. Lond., M.R.C.S., has been appointed House Surgeon to the Public Hospital and Dispensary, Sheffield.

KEITH, A. D., M.B., C.M. Aberd., has been appointed Parochial Medical Officer for Aboyne, Birse, and Lumphanan, Deeside.

MACKAY, J., M.D. Aberd., L.R.C.P., L.R.C.S. Edin., has been appointed by the Perthshire County Council Medical Officer for the Aberfeldy District.

MADDOX, E. E., M.D. Edin., has been appointed Oculist to the Edinburgh Deaf and Dumb Institution.

MCCANN, F. T., M.B., C.M. Edin., has been appointed House Surgeon to the Hospital for Sick Children, Great Ormond-street, Bloomsbury, vice W. T. Brook, Esq.

MCLENNAN, QUINTIN, M.B., C.M. Glasg., has been appointed Assistant Surgeon to the Royal Infirmary, Glasgow.

MIDDLEMASS, JAMES, M.B., C.M., B.Sc., has been appointed Resident Pathologist to the Royal Asylum for the Insane, Morningside, Edinburgh, vice W. H. Barrett.

PELLOW, W. T., L.D.S.R.C.S. Irel., has been appointed Dentist to the Royal South Hants Infirmary.

POPERT, A. W., L.R.C.P. Lond., M.R.C.S., has been appointed Parochial Medical Officer for Churchtown, of the Southport District.

ROWAT, JOHN, M.B., C.M. Glasg., has been appointed Medical Officer for the Darvel Division of the Parish of Newmilns.

THOMSON, D. I., L.R.C.P., L.R.C.S. Edin., has been appointed Medical Officer for the Highclere District of the Kingsclere Union.

VERNON, H. W., M.B., M.Ch. Edin., has been appointed Parochial Medical Officer for Birkdale, of the Southport District.

WARE, G. S., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer for the Raynham District of the Walsingham Union.

WEAVER, W. G., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer for the Eighth District of the Wycombe Union.

WESTMACOTT, F. H., M.R.C.S., L.R.C.P., has been appointed Junior Resident Medical Officer to the General Hospital for Sick Children, Pendlebury, Manchester.

WHITE, DIGBY COOKE, B.A., M.B., B.Ch., B.A.O. Dub., has been appointed Junior House Surgeon to the Public Hospital and Dispensary, Sheffield.

YEOMAN, C., M.B. Camb., M.R.C.S., has been appointed Medical Officer for the Eighth District of the North Bierley Union, vice Rawson, deceased.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement.

BRADFORD INFIRMARY.—Junior House Surgeon. Salary £50 per annum, with board and residence.

CHESTER GENERAL INFIRMARY.—Visiting Surgeon for two years. Salary £80 per annum, with residence and maintenance in the house.

CITY OF LONDON LYING-IN HOSPITAL, City-road, E.C.—District Surgeons.

COUNTY AND COUNTY OF THE BOROUGH OF CARMARTHEN INFIRMARY. House Surgeon. Salary £100 per annum, with board, lodging, fire, light, and washing. (Apply to the Secretary, 11, Morley-street, Carmarthen.)

DENBIGHSHIRE INFIRMARY, Denbigh.—House Surgeon. Salary to commence at £85 per annum, with board, residence, and washing in the house.

EAST SUFFOLK AND IPSWICH HOSPITAL.—House Surgeon. Salary £80 per annum, with board, lodging, and washing. (Apply to the Secretary, Thoro'fare, Ipswich.)

EVELINA HOSPITAL FOR SICK CHILDREN, Southwark-bridge-road, S.E.—Junior Resident Medical Officer. Salary £50 per annum.

GENERAL HOSPITAL, Birmingham.—Assistant House Surgeon for six months. No salary, but residence, board, and washing will be provided.

GREAT NORTHERN CENTRAL HOSPITAL, Holloway-road, N.—Surgeon to the out-patients.

MORPETH DISPENSARY.—House Surgeon. Salary £120 per annum, with house, coal, and gas free.

POPLAR HOSPITAL FOR ACCIDENTS, East India-road, E.—Senior Resident House Surgeon for one year. Salary £100 per annum, with board.

ROYAL ALBERT HOSPITAL, Devonport.—Assistant House Surgeon for six months. No salary. Board, lodging, and washing provided.

ROYAL WESTMINSTER OPHTHALMIC HOSPITAL, King William-street, West Strand.—Clinical Assistants for six months.

ST. BARTHOLOMEW'S HOSPITAL, London.—Physician-Accoucheur and Lecturer on Midwifery.

ST. BARTHOLOMEW'S HOSPITAL, London.—Assistant Physician-Accoucheur.

TOWNSHIP OF MANCHESTER.—Resident Assistant Medical Officer at the Workhouse at Crumpsall, near Manchester. Salary £100 per annum, with furnished apartments, fire, light, washing, and attendance. (Apply to the Clerk of the Guardians, Poor-law Offices, New Bridge-street, Manchester.)

UNIVERSITY COLLEGE, London, W.C.—Surgical Registrar.

WESTON-SUPER-MARE HOSPITAL.—House Surgeon. Salary £50 per annum, with board and residence in the hospital.

WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL, Wolverhampton.—Resident Assistant for six months. Board, lodging, and washing provided.

Births, Marriages, and Deaths.

BIRTHS.

BERRILL.—On Dec. 8th, at Waveney House, South Woodford, Essex, the wife of Alfred Berrill, L.R.C.P. Lond., M.R.C.S., of a daughter.

BEVERLEY.—On Dec. 5th, at Norwich, the wife of Michael Beverley, M.D., of a son.

BOWES.—On Dec. 4th, at Herne Bay, the wife of Chas. Kessick Bowes, M.A., M.B. Oxon., of a son.

CHRISTISON.—On Dec. 6th, at Edinburgh, the wife of David Christison, M.D., of a daughter.

FAUSSET.—On Nov. 29th, at Tamworth, the wife of Herbert J. Fausset, M.D., of a daughter.

GORDON.—On Dec. 7th, at Wickham-road, Brockley, S.E., the wife of J. Gordon, M.D., of a son.

MACQUEEN.—On Dec. 2nd, at Sussex House, Eastbourne, the wife of Thos. MacQueen, M.B., C.M., of a daughter.

PUCKLE.—On Dec. 5th, at Bishops Castle, Shropshire, the wife of Selwyn Hale Puckle, M.B., of a daughter.

ROBINS.—On Dec. 7th, at 46, Marsham-street, Westminster, S.W., the wife of Geo. Norman Robins, L.R.C.P., of a daughter.

SHEARS.—On Dec. 4th, at 19, Upper Duke-street, Rodney-street, Liverpool, the wife of Chas. H. Shears, L.R.C.P.Lond., M.R.C.S., of a son.

WHISHAW.—On Dec. 2nd, at Meaburn, Coombe-road, Croydon, the wife of Reginald R. Whishaw, F.R.C.S., of a son.

MARRIAGES.

BARBOUR—SMITH.—On Dec. 4th, at S. Philip's, Earl's-court-road, S.W., J. M. Barbour, M.B., C.M., to Emily, youngest daughter of the late Rev. R. M. Smith, Rector of Otterham, Cornwall.

BROWN—LEVER.—On Dec. 6th, at All Saints', Fulham, Alex. Stewart Brown, F.R.C.S., L.R.C.P., of Brockley, S.E., to Walburga, fifth daughter of J. O. Lever, Esq.

BURTON—BOWDEN.—On Dec. 4th, at St. John's Church, Ealing Dean, Robert Graves Burton, M.D., of Hanwell, to Louisa Edith, daughter of the late Alfred Bowden, of Ealing Dean.

LOWRY—STANLEY.—On Dec. 10th, at St. James's Church, Tunbridge Wells, by the Rev. M. R. Graham, Vicar of Arthuret, Cumberland, uncle of the bride, assisted by the Rev. A. T. Scott, Vicar, John Henry Lowry, Surgeon, Chinese Imperial Customs Service, son of John Lowry, Belfast, to Charlotte, eldest daughter of the late William Stanley, D.L., J.P., Ponsonby Hall, Cumberland.

REID—PHILLIPS.—On Oct. 14th, at Foochow, China, Duncan James Reid, M.B., C.M. Aber., of Shanghai, to Edith Emily, eldest daughter of Geo. Phillips, Esq., H.B.M.'s Consul, Foochow, China.

DEATHS.

HOLMAN.—On Dec. 5th, at East Hoathly, Henry Holman, M.R.C.S., aged 88 years.

MACKINTOSH.—On Dec. 6th, at Grosvenor-place, Venner-road, Sydenham, James Innes Mackintosh, M.D., late of Bolton, Lancashire, aged 70 years.

TODD.—On the 7th inst., at Castle Hill-avenue, Folkestone, Richard Cooper Todd, Deputy Surgeon-General, in his 66th year.

N.B.—A fee of 5s. is charged for the Insertion of Notices of Births, Marriages, and Deaths.

BOOKS ETC. RECEIVED.

ALCAN, FÉLIX, Paris.
Les Microbes de la Bouche. Par le Dr. Th. David. 1890. pp. 302.
Recherches Expérimentales sur l'Origine Microbienne du Tétanos. Par Paul B. Bossano. 1890.

BABYHOOD PUBLISHING COMPANY, New York and London.
Babyhood: a Monthly Magazine for Mothers. By L. M. Yale, M.D. Vol. VI. December, 1889, to November, 1890. pp. 383.

BAILLIÈRE, TINDALL, & COX, King William-street, Strand, London.
Aids to Sanitary Science. By F. J. Allan, M.D. Edin. 1890. pp. 236. Price 4s. 6d.
Researches on Micro-organisms. By A. B. Griffiths, Ph D., F.R.S.E. Illustrated with 52 Figures. 1891. pp. 360.

BALE & SONS, Great Titchfield-street, Oxford-street, London.
The Cure of Diphtheria. By H. E. Trestrail, M.R.C.P., F.R.C.S.

BLACKIE & SON, Old Bailey, London.
Blackie's Modern Cyclopædia. By Chas. Annandale, M.A., LL.D. Vol. VIII. 1890. pp. 512.

CHAMPNESS & Co., Imperial Buildings, Ludgate-circus, London.
The Insurance Blue-book and Guide, 1890-91. pp. 352.

DAVIS, F. A., Philadelphia and London.
Principles of Surgery. By N. Senn, M.D., Ph.D. Illustrated. 1890. pp. 611.
Twelve Lectures on the Structure of the Central Nervous System. By L. Edinger. Second Edition, revised, with Illustrations. Translated by W. H. Vittum, M.D. Edited by C. E. Riggs, A.M., M.D. 1890. pp. 230.
Heredity, Health, and Personal Beauty. By John V. Shoemaker, A.M., M.D. 1890. pp. 422.
Electricity in the Diseases of Women. By G. B. Massey, M.D. Second Edition, revised and enlarged. 1890. pp. 240.
Diabetes: its Causes, Symptoms, and Treatment. By C. W. Purdy, M.D. With Clinical Illustrations. 1890. pp. 184.

EDUCATION SOCIETY'S STEAM PRESS, Byculla, Bombay.
Rudiments of Sanitation for Indian Schools. By Patrick Hehir, M.D. 1890. pp. 235.

GRIFFIN, CHAS., & Co., Exeter-street, Strand, London.
Foods and Dietaries. A Manual of Clinical Dietetics. By R. W. Burnet, M.D. 1890. pp. 196.

LEWIS, H. K., Gower-street, London.
Notes on Typhoid Fever; Tropical Life and its Sequelæ. By Jeffery A. Marston, M.D. 1890. pp. 165.

LIVINGSTONE, E. & S., Edinburgh.
Manual of Surgical Anatomy. By A. W. Hughes, F.R.C.P. Edin., M.R.C.S. With coloured Plates. 1890. pp. 176.

LONGMANS, GREEN, & CO., Paternoster-row, London.
On Severe Vomiting during Pregnancy. By Graily Hewitt, F.R.C.P., F.R.C.S. Edin. 1890. pp. 147. Price 6s.
The First Crossing of Greenland. By F. Nansen. Translated from the Norwegian by H. M. Gepp, B.A. With Maps and Illustrations. Two Volumes. Vols. I. and II. 1890. pp. 510 and 509. Price 36s.

OLIVER & BOYD, Edinburgh.
The Transactions of the Edinburgh Obstetrical Society. Vol. XV. Session 1889-90. pp. 250.

PENTLAND, YOUNG J., Edinburgh and London.
Suggestive Therapeutics; a Treatise on the Nature and Uses of Hypnotism. By H. Bernheim, M.D. Translated by C. A. Herter, M.D. Second Edition. 1890. pp. 420.
A Text-book of Practical Therapeutics. By H. A. Hare, M.D. 1890. pp. 632.

SANITARY INSTITUTE, 74A, Margaret-street, W.; and E. STANFORD, Cockspur-street, Charing-cross, London.
Transactions of the Sanitary Institute. Vol. X.: Congress at Worcester. 1888-89. pp. 376.

SMITH, JOHN, & SON, West George-street, Glasgow.
Proceedings of the Philosophical Society of Glasgow, 1889-90. Vol. XXI. Edited by the Secretary. pp. 286. Price 10s. 6d.

UNWIN, T. FISHER, Paternoster-row, London.
Chess for Beginners, and the Beginnings of Chess. By R. B. Swinton. Illustrated. 1891. pp. 198.

VOGEL, F. C. W., Leipzig; and WILLIAMS & NORGATE, Henrietta-street, Covent-garden, London.
Jahrbücher der Hamburgischen Staats-Krankenanstalten. Von Professor Dr. Alfred Kast. I. Jahrgang. 1889. pp. 484.

"Electricity of Every-day Life"; by Frank B. Lea, A.I. El. E. (E. W. Allen, London, 1890); price 2d.—Barker's Facts and Figures for the year 1891; edited by T. P. Whittaker (F. Warne & Co., London, and New York), price 1s.—Edinburgh Health Society: Health Lectures for the People, No. 4: Colour Blindness and Defective Sight in relation to Public Duty; by Geo. Mackay, M.D. (Macniven & Wallace, Edinburgh, 1890); price 1d.—The Official Gazette of the United States Patent Office, issued Nov. 11th, 1890 (Government Printing Office, Washington).—Willing's (late May's) British and Irish Press Guide, 1890 (James Willing, Jun., Piccadilly, London); price 1s.—Differentiation in Rheumatic Diseases (so called); by Hugh Lane, L.R.C.P. (J. & A. Churchill, London, 1890); price 1s. 6d.—The Smoker's Garland: Charles Lamb, Thomas Carlyle (At the Office of "Cope's Tobacco Plant," Lord Nelson-street, Liverpool, 1890).—Ueber Muskelregeneration nach Verletzungen Experimentelle Untersuchung; von Dr. C. Nauwerck (Gustav Fischer, Jena, 1890).—Das Cylinderepithel-Carcinom des Magens und des Dickdarms; von G. Hauser (G. Fischer, Jena, 1890).—De la Tuberculose Chirurgicale; par le Dr. Paul Thiéry (G. Steinheil, Paris, 1890).—Lehrbuch der Speciellen Pathologischen Anatomie; von Dr. Ernest Ziegler (G. Fischer, Jena, 1890).—Caffyn's Liquor Carnis (at the Liquor Carnis Company, Holborn Viaduct, London).—The Convolutions of the Brain, a Study in Comparative Anatomy; by Sir Wm. Turner, M.B., D.C.L. (Williams & Norgate, London).—Bulletins et Mémoires de la Société Médicale des Hôpitaux de Paris, troisième série, septième année (G. Masson, Paris).—Lehrbuch der Auscultation und Percussion; von Dr. C. Gerhardt (Verlag der H. Laupp'schen Buchhandlung, Tübingen, 1890).—Contribuzione allo Studio delle varie Forme di Epatite; per il Dottor A. Testi (P. Conti, Faenza, 1890).—Klinische Abhandlungen; von Dr. G. A. Sacharjin (A. Hirschwald, Berlin, 1890).—Aetiologische und Klinische, Malaria-studien; von Dr. F. Plehn (A. Hirschwald, Berlin, 1890).—Zur Geschichte des Brustsiches; von Professor Dr. C. Gerhardt (August Hirschwald, Berlin, 1890).—Bibliotheca Medico-Chirurgia, Pharmaceutico-Chemica, et Veterinaria; herausgegeben von G. Ruprecht; I. Hefte 1, 2, und 3 (Vandenhoeck und Ruprecht, Göttingen, 1890).—Index-Medicus: Authors and Subjects; Vol. XII., No. 10, October, 1890 (Trübner & Co., and Lewis, London).—Handbook to Dr. Koch's Treatment in Tubercular Disease; by E. F. Grün, M.R.C.S., L.R.C.P., and W. D. Severn, Assoc. R.C. Sci. (J. & A. Churchill, London).—Visitors' Guide to Bowral, the Sanatorium of New South Wales (D. Beer, Bowral, 1890).—The Vital Statistics of Queensland, 1889).—One Hundred Cheap Dishes, each of which can be made for less than 1s. (Pawsey & Hayes, Ipswich); price 6d.—The Relation of Bacteria to Practical Surgery; by J. B. Roberts, A.M., M.D. (W. J. Dornan, Philadelphia, 1890).—Ancora due Parole sulla Cura Abortive del'Eresipela; pel Dr. Natale Amici (Dott. F. Vallardi, Milano).—The Medical Bulletin Visiting List, or Physician's Call Record; new edition (F. A. Davis, Philadelphia and London, 1891).—Beeton's Diary and Englishman's Every-day Reference Book for 1891 (M. Beeton, London); price 6d.—Contributo alla Dottrina della Localizzazioni Cerebrali e della Epilessia Jacksoniana; Centri Termici; pel Dott. Bartolomeo Baculo (Salvati, Napoli).—The Dublin Journal of Medical Science; edited by J. W. Moore, M.D. Dub.; third series, December, 1890 (Fannin & Co., Dublin).—Magazines for December: Cassell's New Popular Educator, Part 26; Strand Magazine, No. 1; Good Words, with Christmas Number ("In the Shade of Schiehallion," by C. Blatherwick); Sunday Magazine, with Christmas Number ("The Flight of the Shadow," by Dr. G. Macdonald); Girl's Own Paper, with Christmas Number ("Virgin Snow"); Sunday at Home; Scribner's Christmas Number; Boy's Own Paper, with Christmas Number. Also the Christmas Numbers of the Graphic, Yule Tide, Myra's Journal, the Gentlewoman, and Pictorial World.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Dec. 11th, 1890.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Dry Bulb.	Wet Bulb.	Solar Radia in Vacuo.	Maximum Temp. Shade.	Min. Temp	Rainfall.	Remarks at 8.30 A.M.
Dec. 5	29·84	S.E.	39	37	..	43	36	·06	Overcast
,, 6	29·99	E.	38	36	..	41	36	..	Overcast
,, 7	30·14	E.	36	34	47	39	31	..	Cloudy
,, 8	29·95	S.E.	37	35	41	38	34	..	Overcast
,, 9	30·06	S.E.	38	36	..	42	34	..	Overcast
,, 10	30·20	S.E.	32	..	..	37	30	..	Foggy
,, 11	30·19	S.E.	31	..	..	34	27	..	Foggy

Medical Diary for the ensuing Week.

Monday, December 15.

ROYAL LONDON OPHTHALMIC HOSPITAL, MOORFIELDS.—Operations daily at 10 A.M.

ROYAL WESTMINSTER OPHTHALMIC HOSPITAL.—Operations, 1.30 P.M., and each day at the same hour.

CHELSEA HOSPITAL FOR WOMEN.—Operations, 2.30 P.M.; Thursday, 2.30.

ST. MARK'S HOSPITAL.—Operations, 2.30 P.M.; Tuesday, 2.30 P.M.

HOSPITAL FOR WOMEN, SOHO-SQUARE.—Operations, 2 P.M., and on Thursday at the same hour

METROPOLITAN FREE HOSPITAL.—Operations, 2 P.M.

ROYAL ORTHOPÆDIC HOSPITAL.—Operations, 2 P.M.

CENTRAL LONDON OPHTHALMIC HOSPITAL.—Operations, 2 P.M., and each day in the week at the same hour.

UNIVERSITY COLLEGE HOSPITAL.—Ear and Throat Department, 9 A.M.; Thursday, 9 A.M.

SOCIETY OF ARTS.—8 P.M. Prof. Vivian B. Lewes: Gaseous Illuminants. (Cantor Lecture.)

MEDICAL SOCIETY OF LONDON.—8.30 P.M. Sir Andrew Clark: Observations on the Convulsive Cough of Puberty.—Mr. Harrison Cripps: Two Doubtful Cases of Fibrous Stricture of the Colon Diagnosed by Laparotomy and Treated by Colotomy.

Tuesday, December 16.

KING'S COLLEGE HOSPITAL.—Operations, 2 P.M.; Fridays and Saturdays at the same hour.

GUY'S HOSPITAL.—Operations, 1.30 P.M., and on Friday at same hour. Ophthalmic Operations on Monday at 1.30 and Thursday at 2 P.M.

ST. THOMAS'S HOSPITAL.—Ophthalmic operations, 4 P.M.; Friday, 2 P.M.

CANCER HOSPITAL, BROMPTON.—Operations, 2 P.M.; Saturday, 2 P.M.

WESTMINSTER HOSPITAL.—Operations, 2 P.M.

WEST LONDON HOSPITAL.—Operations, 2.30 P.M.

ST. MARY'S HOSPITAL.—Operations, 1.30 P.M. Consultations, Monday 2.30 P.M. Skin Department, Monday and Thursday, 9.30 A.M. Throat Department, Tuesdays and Fridays, 1.30 P.M. Electro-therapeutics, same day, 2 P.M.

PATHOLOGICAL SOCIETY OF LONDON.—8.30 P.M. Mr. James Barry: Femur after Osteotomy.—Dr. H. P. Rolleston: Lipoma of Liver (? Appendix Epiploica).—Mr. Bland Sutton: Harlequin Calf.—Dr. F. Wethered: Pallosis.—Mr. B. Pitts: Substernal Goitre arising in Accessory Thyroid.—Dr. Norman Moore: Ulceration and Perforation of Gall-bladder without Gall Stones.—Mr. Edgar Willett: Intracystic Carcinoma from Pectoral Region.—Dr. J. Cahill: Tumour of Trachea and Œsophagus. Card Specimens:—Mr. J. Hutchinson, jun.: "Fungous Bodies" in Mammary Carcinoma.—Mr. W. D. Spanton: Myxosarcoma of Prostate.—Dr. Hale White: Commencing Suppuration of the Gall-bladder in Typhoid Fever.—Dr. W. Tyson: Lipoma from Arm; Gall-stone in Ductus Communis; death with pylephlebitis.

Wednesday, December 17.

NATIONAL ORTHOPÆDIC HOSPITAL.—Operations, 10 A.M.

MIDDLESEX HOSPITAL.—Operations, 1 P.M. Operations by the Obstetric Physicians on Thursdays at 2 P.M.

ST. BARTHOLOMEW'S HOSPITAL.—Operations, 1.30 P.M.; Saturday, same hour. Ophthalmic Operations, Tuesday and Thursday, 1.30 P.M. Surgical Consultations, Thursday, 1.30 P.M.

CHARING-CROSS HOSPITAL.—Operations, 3 P.M., and on Thursday and Friday at the same hour.

ST. THOMAS'S HOSPITAL.—Operations, 1.30 P.M.; Saturday, same hour.

LONDON HOSPITAL.—Operations, 2 P.M. Thursday & Saturday, same hour.

ST. PETER'S HOSPITAL, COVENT-GARDEN.—Operations, 2 P.M.

SAMARITAN FREE HOSPITAL FOR WOMEN AND CHILDREN.—Operations, 2.30 P.M.

GREAT NORTHERN CENTRAL HOSPITAL.—Operations, 2 P.M.

UNIVERSITY COLLEGE HOSPITAL.—Operations, 1.30 P.M.; Skin Department, 1.45 P.M.; Saturday, 9.15 A.M.

ROYAL FREE HOSPITAL.—Operations, 2 P.M., and on Saturday.

CHILDREN'S HOSPITAL, GREAT ORMOND-STREET.—Operations, 9.30 A.M.; Surgical Visits on Wednesday and Saturday at 9.15 A.M.

ROYAL MICROSCOPICAL SOCIETY.—8 P.M. Ordinary Meeting.

SOCIETY OF ARTS.—8 P.M. Mr. George Davison: Impressionism in Photography.

Thursday, December 18.

ST. GEORGE'S HOSPITAL.—Operations, 1 P.M. Surgical Consultations, Wednesday, 1.30 P.M. Ophthalmic Operations, Friday, 1.30 P.M.

UNIVERSITY COLLEGE HOSPITAL.—Operations, 2 P.M.; Ear and Throat Department, 9 A.M.

CHARING-CROSS HOSPITAL.—Dr. Black: Pelvic Inflammations. (Post-Graduate Course.)

NEUROLOGICAL SOCIETY OF LONDON (National Hospital, Queen-sq.).—8.30 P.M. Dr. James Ross: Memory.

Friday, December 19.

ROYAL SOUTH LONDON OPHTHALMIC HOSPITAL.—Operations, 2 P.M.

Saturday, December 20.

MIDDLESEX HOSPITAL.—Operations, 2 P.M.

UNIVERSITY COLLEGE HOSPITAL.—Operations, 2 P.M.; and Skin Department, 9.15 A.M.

Notes, Short Comments, & Answers to Correspondents.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this Office.

All communications relating to the editorial business of the journal must be addressed "To the Editors."

Lectures, original articles, and reports should be written on one side only of the paper.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers, not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale, and advertising departments of THE LANCET *to be addressed "To the Publisher."*

We cannot undertake to return MSS. not used.

MEDICINE'S FORGOTTEN WORTHIES.

THE professional man on a continental holiday, particularly in Italy, is often touched by finding in some old cathedral or deserted "Campo santo" a memorial tablet recording the virtues and services of a great surgeon or physician, whose "work has followed him" literally to the tomb. At the close of last century and beginning of this there were few anatomists, physiologists, or clinicians more distinguished than Leopoldo Marc' Antonio Caldani, professor in Padua and Parma, who was one of the first to appreciate the tremendous advance effected by Von Haller's doctrine of muscular irritability. Now, even in his own country, he is merely *nominis umbra*, and, but for a niche in Haeser's "Grundriss der Geschichte der Medicin," would be quite unknown beyond the Italian frontier. Some "Old Mortality" of the profession would lay it under lasting obligations by noting down such memorial inscriptions as that which still appeals to the worshipper in the dim, religious light of the Church of the Eremitani in Padua:—

H. S. E.
LEOPOLDUS M. ANT. CALDANI
Bononiensis
Medicus Celeberrimus
Hallerianae Doctrinae
Propugnator Invictus
Artis Med. Pathol. Physiol. et Anatom.
In Magno Patav. Lyceo
Professor Praeclarissimus
De Hoc Templo Optime Meritus
Natus XI Kal. Dec. Ann. MDCCXXV
Defunctus III Kal. Jan. Ann. MDCCCXIV

[Here lies Leopold Marc Antony Caldani of Bologna; a most distinguished physician; an invincible champion of Haller's doctrine; an illustrious professor in the University of Padua, of medicine and of anatomy, pathological and physiological, who has laid this church under the heaviest obligations. Born on the 22nd Nov., 1725; died on the 30th Dec., 1814.] Caldani, in conjunction with his nephew, Floriano Caldani, published at Venice, between the years 1801-14, the magnificent "Icones Anatomicae," which, in four quarto volumes of text and one folio volume of illustrations, are still prized for their exquisite copper engravings, and also for their presentation of the high-water mark of anatomy in the first decade of the nineteenth century.

Mr. E. F. Grün.—We are glad that our correspondent takes essentially the same view that we expressed. He will do us the justice to admit that we made our remarks as impersonal as possible. We thank him for his recognition of our desire to be fair, and for the report of the cases he encloses in his letter.

"INSUSCEPTIBILITY TO VACCINATION."

To the Editors of THE LANCET.

SIRS,—Mr. W. Towers Smith appears to me to have missed the point of the letter of the 15th ult., which is not is one large vesicle as good as four small ones? but is one small one at a cheap dispensary equal to four small ones at a public vaccination station? The Local Government Board Orders say there must be half a square inch of vesicle; the cheap dispensary men habitually certify success on one quarter of that surface. Now, either theirs is not a successful vaccination, or the other is something more than is required. Would not reform in this matter do away with a large number of vaccinated cases of small-pox in future epidemics?

I am, Sirs, yours truly,

New Romney, Dec. 2nd, 1890. HENRY HICK.

THE MIDWIVES' BILL.

Dr. Rentoul favours us with another long letter, and encloses numerous suggested amendments to the above Bill. He will now (as pointed out in our leading article) have time to develop his very pronounced opposition to this Bill. But he must make up his mind as to one of two courses—either to oppose all legislation, on the ground that it is enough to trust to midwives voluntarily seeking diplomas and certificates, or to abandon this absolute opposition, and make the best of a Bill which he cannot altogether avert. He is embarrassed with too many ideas, and he thinks Parliament as much interested in a Midwives' Bill as in a political measure which decides the fate of parties and the course of history. He complains in his letter that this Bill comes from consultants who give guinea cases to midwives in preference to medical practitioners. We certainly are unaware of the existence of any such persons. Some of his amendments are of a character that would never be embodied in a Bill. One would define natural labour and the proper presentation; another would forbid a midwife to take a less fee than 15*s*. His proposal to ask the Government to appoint a Select Committee is a practical one, and, if urged by the medical members of the House, might have some weight. As we have shown in another column, the House of Commons has responsibilities in this matter which the Government should keep before its mind.

Civis.—The places mentioned are probably too cold for invalids. Hastings, Bournemouth, or Ventnor are more congenial.

PECULIAR CASE OF CEPHALALGIA.

To the Editors of THE LANCET.

SIRS,—If any of your readers can give me some hints with reference to the treatment of the following case I shall feel grateful.

A young lady, aged twenty-two, for some years has suffered from headache at intervals. The pain is in the great majority of cases present on Sunday only, on which day she does a good deal of Church work, in the school, &c. On the weekdays she is also well occupied; but the work is not so much of a mental character, though this is considerable. The situation of the pain is mostly on the summit of the head, but sometimes frontal, sometimes parietal, and changing. Its character is throbbing, excruciating, with exacerbations, not seemingly neuralgic. The superficial tenderness is very slight. The patient's temperament is nervous. Prior to June, 1889, she was chlorotic, and suffered from amenorrhœa. Then the attacks were more frequent and severe. Since then, after a course of treatment, she has been healthy and strong, but not plethoric, and the headache remains. All the organs act quite normally. On testing with ophthalmoscope, there is no evidence of hypermetropia. Change to the country or seaside has almost no influence. Drugs, such as bromides, quinine, antipyrin, aperients, and local remedies, seem useless, and sleep only, which it is difficult to induce, gives relief. Would galvanism or massage, as some practitioners advocate, be of use? I am, Sirs, yours truly,

Dec. 5th, 1890. GRADUATE.

GLYCERINE TINCTURES.

To the Editors of THE LANCET.

SIRS,—In reply to "C.," I can strongly advise him to try the glycerine tinctures. For some time past I have used as a substitute for the nux vomica tincture of the British Pharmacopœia the following:—Two drachms of extract of nux vomica, twenty ounces of glycerine, and twenty ounces of distilled water. When dissolved, filter. I have found this very good. I have also used an ipecacuanha glycerole instead of ipecacuanha wine. This is made by macerating the root in equal parts of glycerine and distilled water, the same strength as ordered in the British Pharmacopœia. I am, Sirs, yours faithfully,

Peterborough, Dec. 9th, 1890. W. EASBY, M.D.

THE USE OF THE TITLE OF PHYSICIAN BY GRADUATES OF UNIVERSITIES.

WE have received more letters on this subject, for which we cannot find room. The correspondence must be closed for the present.

Mr. R. H. Firth.—A report can no doubt be obtained by application to the Clerk of the Maidstone Sanitary Authority.

FUNERALS IN INCLEMENT WEATHER.

To the Editors of THE LANCET.

SIRS,—At this season of the year the practice of standing bare headed at the graveside for any length of time is a source of danger to many. Kindly permit me to call attention to a suggestion made by Mr. T. Twining of Twickenham, who has pointed out that any scarf or comforter, if sufficiently large—say, five feet long without the fringe by about a foot wide—can be doubled, and one side sewn together from the top half way down, so as to form a hood, which affords a covering for the head, while the ends are crossed over the chest and fastened. The conversion of an ordinary scarf into a temporary hood for use at a funeral seems to commend itself by its simplicity, cheapness, and adaptability. I am, Sirs, yours obediently,

F. LAWRENCE,
Hon. Sec. Funeral Reform Association.

Westow Vicarage, York, Dec. 3rd, 1890.

LORD DUNRAVEN AND THE SWEATING SYSTEM.

LORD DUNRAVEN'S impression is that the work done by the Committee of the House of Lords on Sweating has borne fruit in many ways. What is now sought for is legislation founded upon the evidence taken, and sanitation in workshops and dwellings used as workshops. Lord Dunraven thinks that compulsory registration should be applied to all workshops in which three or more persons work, whether in private houses or not.

Dr. A. Conan Doyle.—Our correspondent would do well to write to the Secretary of the Anglo-American Vienna Medical Association, the offices of which are, or were, situated at No. 12, Landesgerichts Strasse, Vienna.

MYXŒDEMA, OR WHAT?

To the Editors of THE LANCET.

SIRS,—Would any of your readers help me in the diagnosis and treatment of the following case?

The patient, a lady aged about sixty, was taken ill five years ago with violent pain in the knees and ankles, not accompanied by any swelling or signs of inflammation. At the same time she was subject to periodical attacks of faintness. Four months afterwards the joints were inflamed and swollen. These symptoms continued, with variable intermissions, for about eighteen months, when coldness of the hands and some loss of power of the fingers and muscles of the leg were experienced, the patient being unable to walk from this time. The present condition is as follows:—Well nourished. Temperature subnormal; pulse slow and weak; bowels constipated. Urine contains a trace of albumen at times, and then the pains are more severe. Speech slow. Mental condition good. There appears to be a general œdema of the limbs, and the upper lip is swollen; no pitting. The face is pale and waxy-looking, with a circumscribed blush on each cheek. Wrists and ankles are swollen. No alteration in the bones about the joints, but the muscles appear atrophied and flabby. The chief symptoms are the continuous pain and the swelling and inflammation about the joints. The patient has been treated for gout, rheumatism, rheumatoid arthritis, &c., without relief. I should esteem it a favour if any of your readers would give me suggestions to throw any light upon the case.

I am, Sirs, yours truly,

December, 1890. CATHEDRAL.

DEATH OF A VETERAN WATERMAN.

THOSE of our readers, and they must be many, who are interested in perhaps the most important form of modern athletics—rowing—will hear with regret of the recent death of "Honest" John Phelps, at the advanced age of eighty-five. A correspondent well known in the amateur rowing world writes as follows:—

> "No doubt the sporting papers will give full particulars of the life of the late John Phelps, who died last Friday. But I thought THE LANCET might like to allude to him as showing what rowing can do towards a long and healthy life; for within quite a recent period Old John was working about the river in his old wherry, earning an honest shilling. The enclosed printed paper will show what old amateur oarsmen thought of him."

A sporting contemporary mentions that John Phelps had been a sculler for nearly seventy-three years, as he commenced his sculling career when only twelve years of age by rowing second to John Kelley (father of Harry Kelley, ex-champion). Phelps was for many years judge in the inter-university boat-races between Oxford and Cambridge.

THE ELECTRIC LIGHT.

To the Editors of THE LANCET.

SIRS,—I am about to have the electric light installed in my house. Could any of your readers kindly inform me whether such light is perfectly satisfactory for ophthalmoscopic purposes, and whether there is any form of lamp which is especially to be preferred?

I am, Sirs, yours obediently,

Dec. 9th, 1890. OCULIST.

THE GEOLOGICAL THEORY OF CANCER ORIGIN.

A CORRESPONDENT, signing himself *Salopian*, in reference to Dr. Herbert Snow's statement in THE LANCET (Nov. 22nd), that "not half a dozen houses can possibly be affected by the largest river flood," and that "Shrewsbury is practically exempt from flood," says that if Dr. Snow "would take the trouble to visit Shrewsbury at the present time [Nov. 26th] he would find dozens of houses flooded, not to mention fields by the riverside totally submerged."

Senex (Bury).—We know of only one book (the "Via Medica") on the subject, published some years ago, and now, we believe, out of print.

"HYPODERMIC TABLOIDS."

To the Editors of THE LANCET.

SIRS,—Some weeks back I wrote to complain of the difficulty I had in dissolving a hypodermic tabloid of apomorphia. Since then a trial of some left with me by Messrs. Burroughs and Wellcome has convinced me that their new tabloids are quickly and entirely soluble. In justice to this firm, I beg leave to make this statement.

I am, Sirs, yours truly,

Shepherd's Bush, Dec. 5th, 1890. WM. BULL, F.R.C.S.Ed.

REFUSAL OF ADVICE TO PROFESSIONAL BRETHREN.

ONE of the most successful practices in Moscow is made by a certain university professor, who has the reputation of exacting very large fees from his patients. For some time past complaints have appeared in various Russian medical journals from medical men who wished for the advice of the celebrated professor for themselves, and were unable to obtain it. Some of these gentlemen offered to pay the fee whatever it might be, which is expected from a lay patient; but it made no difference; they were still refused advice, the professor causing information to be given to medical men seeking his assistance that he never accepts a medical man as a patient, even for a fee. This extraordinary practice is severely commented on in professional circles and in the press.

THE USE OF FRUIT IN DIABETES.

To the Editors of THE LANCET.

SIRS,—In answer to "M.B.Glas.," concerning the use of apples and oranges in diabetes, I beg to say that the result of considerable experience in such cases is that I condemn oranges and apples and every kind of fruit, except nuts, such as filberts, walnuts, almonds, and Brazil nuts, eaten with plenty of salt. I am, Sirs, yours truly,

Huddersfield, Dec. 9th, 1890. WILLIAM SCOTT, M.D.

ERRATUM.—On page 1163, second col., line 48, for "Maddon's glass-rod," read *Maddox's* glass-rod.

COMMUNICATIONS, LETTERS, &c., have been received from—Dr. Herman, London; Dr. Snow, London; Dr. G. C. Purvis, Edinburgh; Mr. Mayo Robson, Leeds; Mr. Robertson, Edinburgh; Dr. Philipps, Virginia Water; Dr. Easby, Peterborough; Mr. Firth, Dover; Mr. Chauncy Puzey, Liverpool; Dr. T. Barlow, London; Dr. F. C. Cory, Buckhurst-hill; Dr. Dockrell, London; Mr. W. H. Bennett, London; Dr. P. T. Abraham, London; Mr. J. G. Mills, London; Dr. W. Scott, Huddersfield; Mr. H. W. Allingham, London; Mr. W. Whitehead, Manchester; Mr. Grün, London; Mr. Leemy, Kendal; Dr. V. Harris; Dr. Montgomerie, Penzance; Mr. T. Dodd, London; Messrs. Keith and Co., Edinburgh; Mr. C. Macnamara, Dublin; Messrs. Sampson Low and Co., London; Mr. H. C. Gillies, Brockley; Messrs. Baines and Son, Leeds; Mr. Bailey, Leamington; Messrs. Mottershead and Co., Manchester; Mr. Gosse, Sittingbourne; Messrs. Burgoyne and Co., London; Dr. Orr, Wanstead; Prof. Ogston, Aberdeen; Dr. Dixon Mann, Manchester; Mr. T. W. Christie, Liverpool; Messrs. Murany and Co., Paris; Mr. G. Waddell, Newcastle-on-Tyne; Drs. Leslie Phillips and Bateman; Dr. Graham, Beirut; Messrs. Maythorn and Son, Biggleswade; Dr. Wortabet, Beyrout; Messrs. Hargreaves and Son, Preston; Dr. Candler, Victoria; Mr. H. Lee, London; Dr. Oscar Jennings, Paris; Dr. E. Hall, Barabouki; Messrs. Foster, Brown, and Co., Montreal; Dr. R. Cory, London; Mr. W. Bull, London; Dr. Conan Doyle, Southsea; Mr. Southam, Manchester; Messrs. G. Street and Co., London; Mr. Royle, London; Mr. A. S. Morton; Dr. Robert Bell, Glasgow; Mr. Stretton, Kidderminster; Messrs. Cassell and Co., London; Mr. W. S. Richmond; Mr. Frowde; Mr. Coulson, South Shields; Dr. Gumpert, Manchester; Dr. H. May, Tottenham; Dr. D. White, Carlisle; Dr. J. Oliver, London; Mr. Frost, Frome; Dr. J. W. Moore, Dublin; Mr. Brockelbank, Islington; Dr. G. Fleming, St. John's; Dr. Wetherell, Barnsley; Dr. Prowse, Clifton; Mr. Wright, Penzance; Dr. De'Ath, Bucks; Mr. Harvey, London; Mr. Stanford, Charing-cross; Dr. MacLintock, Bradford; Archdeacon Honby, Garstang; Mr. Freer, Llandudno; Messrs. Johnston, Edinburgh; Mr. Sell, London; Mr. Frost, London; Mr. Johnston, co. Down; Mr. Loten, Hull; Mr. Faulkner, Long-acre; Mr. Mason, Bow; Mr. Coghill, Birmingham; Mr. Jones, Bangor; Mr. Little, London; Messrs. Blackie and Son, London; Mr. White, Wolverhampton; Messrs. Knight and Co., London; Mr. Birchall, Liverpool; Messrs. Crossley, Moir, and Co., London; Mr. Hindle, Grantham; Messrs. Duncan, Flockhart, and Co., London; Dr. Allen, Alloa; Mr. Maw, Bradford; Messrs. Lee and Nightingale, Liverpool; Mr. McDonald, Manchester; Messrs. Walser and Grist, Brighton; Mr. Anderson, Aylesbury; Mr. Mayhew, Ipswich; Mr. Vickers, London; Mr. Wand, Leicester; Miss D'Orsey, London; Mr. Ayton, London; Mr. Shepherd, Ilkley; Secretary, Royal Albert Infirmary, Devonport; M.R.C.S.; G. P.; E., Leeds; Maltine Manufacturing Co. Bloomsbury; M.D., M.B., C.M.; Liquor Carnis Co., London; S. W. B., London; W. S. P., London; An L.S.A. and Surgeon; B., London; C. B., London; Secretary, Jessop Hospital for Women, Sheffield; Fever Hospital, Manchester; *Eastern Morning News*, Hull; L.S.A.; Country Magistrate; Secretary, Kent County Asylum, Maidstone; Secretary, General Hospital, Notts.

LETTERS, *each with enclosure*, are also acknowledged from—Mr. Perry, Sheffield; Mr. Macdougall, Gourock; Dr. Ross, Glasgow; Dr. Wilson, Newry; Mr. Dodds, Gateshead; Mr. Tully, Hastings; Messrs. Brady and Martin, Newcastle-on-Tyne; Mr. Cole, Exeter; Mr. Baird, West Hampstead; Mr. O'Meara, Loughboro'; Messrs. Gibbs, Curson, and Co., Wednesbury; Mr. Sampson, Painswick; Messrs. Whittingham and Sons, London; Mr. Jacoby, Stoke-on-Trent; Messrs. Godfrey and Cooke, London; Mr. Tyte, Minchinhampton; Messrs. Fenwick and Chinery, London; Dr. Hoffman, Swansea; Messrs. Mitchell and Co., London; Dr. Winckworth, Shefford, R.S.O.; Messrs. Hewlett and Son, London; Mr. Norris, Weston-super-Mare; Mr. Eminson, Kirton Lindsey; Dr. Raby, Radnor; Mrs. Cook, Towyn; Messrs. Riddle and Co., London; Messrs. Twinberrow, Wigmore-street; Dr. Condy, Cape of Good Hope; Mr. McClean, Walthamstow; Mr. Johnston, North Devon; Mr. Smith, Tredegar; Dr. Kite, Sheffield; Mr. Mears, Liverpool; Mr. Cooke, London; Dr. Muthusawmy, India; Mr. Blatchley, Oxford-street; Mr. Branthwaite, Rickmansworth; Mrs. Jagger, Northallerton; Mrs. Greenleaves, Bournemouth; Mr. Santi, Newcastle-on-Tyne; Miss Dashwood, Leicester; Mr. Clowes, Bolton; Mr. Harvey, Derby; Mr. Pearcey, Taunton; Mr. Grant, Axbridge; Mr. Maitra, India; Mr. Duncan, Glasgow; Mr. Skenfield, Chester; Mr. Brown, Highgate; Mr. Low, Westray; Mr. Purland, Woolwich; Mr. Cross, Rock; Dr. Shepard, Usk; Mr. Eastwood, Hull; Mr. Dunne, Queen's County; Mr. Huggins, London; Mr. Pizzala; Dr. James, Rhondda Valley; Mr. Blunt, Leicester; Dr. Stanley, Sheffield; Dr. Earls, Ben Rhydding; Mr. Walker, Middlesbrough; Messrs. Merryweather, London; Mr. O'Meara, Leicester; Mr. George, Preston; Mr. Warters, Alfreton; Mr. Capron, Clevedon; Dr. Benthall; Mr. Heywood, Manchester; Mr. McLean, Sevenoaks; Rudyard, London; Z, Enfield; Matron; W. M. F., London; W. W., Truro; Secretary, University of Glasgow; A. N. S., London; Verax, London; Hygienic Knitting Co., Kidderminster; Companion, London; Alpha, Seacombe; Lady Superintendent, Nurses' Institute, Jersey; K. M. R, London; F. G., London; W. C. M., Manchester; Poplars, London; Secretary, Bolton Infirmary; Dr. H., London; Insanity, London; Secretary, Borough Hospital, Bootle; M.D., Westbourne-grove; Secretary, Stockport Infirmary; Matron, Notting-hill; Scarborough; Secretary, Northern Hospital, Liverpool; Branch, London; Delta; Royal Albert Edward Infirmary, Wigan; Crescens; H. E. W., London; Militant; Medicus, Stratford; Medicus, Edinburgh; A. B., London; Assistant.

NEWSPAPERS.—*Manchester Examiner, Sheffield Daily Telegraph, Leeds Mercury, Manchester Guardian, Local Government Chronicle, Windsor and Eton Gazette, Leicester Daily Post, Dundee Advertiser, Yorkshire Herald, Liverpool Daily Post, Hull Express, Birmingham Gazette, Weekly Review, Hertfordshire Mercury, Mining Journal, Bristol Mercury, Reading Mercury, Sunday Times, Surrey Advertiser, Builder, Otago Daily Times, Argus (Melbourne), Law Journal, Spectator, Guy's Hospital Gazette, Architect, Scotsman, Exeter Daily Gazette, Toronto Mail, Home News, Edinburgh and Evening Dispatch, Alliance News, Scarborough Gazette, Whitehall Review, Teignmouth Gazette, Durham Chronicle, Observer, Beverley Recorder, The Tocsin, Corriere D'Italia*, &c., have been received.

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